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Edinburgh 1813.

ESSAY

ON THE

CAUSES, EARLY SIGNS,

AND

PREVENTION

OF

PULMONARY CONSUMPTION

FOR THE USE OF

PARENTS and PRECEPTORS.

BY

THOMAS BEDDOES, M. D.

——— Pueri innuptaeque puellae
Impositique rogo juvenes ante ora parentum.

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ERRATA.

Page	line	
27,	20,	for *della Tiſichezza*, r. *del contagio Tiſico.*
28,	6,	for equally, r. equably.
43,	6,	for woman, r. women.
75,	11,	after ſecured, r. but.
156,	9,	for more, r. moſt.
179,	5,	for the glands, r. theſe glands.
252,	10,	for occùr, r. concur.

ESSAY

ON

CONSUMPTION.

VIEW OF THE SUBJECT.

THE prevention of pulmonary conſumption, and its cure, may be numbered among the things moſt wanting to our ſyſtem of life. *Phthisis pulmonalis*, or the diſorder characteriſed by cough, by expectoration of purulent matter, hectic fever and progreſſive emaciation, is known to be almoſt invariably fatal. Of the few who after being once ſeized have eſcaped, no account can be taken, not one in many hundreds finally ſurviving.

Its frequency, in town and country alike, forces itſelf no leſs upon general

notice. But, in conſequence of the profound diſregard of thoſe who conduct the concerns of ſociety to the perſonal condition of its members, and of the baneful ſupineneſs of the public mind on a ſubject of ſuch immediate intereſt, the number of victims cannot be approximately ſtated. In the Britiſh Iſlands it is inconteſtably great. To conſumption nearly one fourth part of the deaths they bear, is referred by the bills of mortality. This, (notwithſtanding their known inaccuracy) ſufficiently indicates the deſolation occaſioned by the complaint, which must be the more lamented when it is conſidered, that thoſe whom it deſtroys, are commonly in the prime of life, and not often paſt the meridian. The Rev. William Gorſuch, by keeping a regiſter for ten years at Shrewſbury, diſcovered that the number of deaths from conſumption was, in his pariſh, ſomewhat more than one in four. By favour of a friend, I poſſeſs the

abſtract of a ſimilar regiſter for one of the pariſhes in Briſtol, where the paſtor has been commendably attentive to the enumeration of his flock. By enquiry from houſe to houſe, he found the population to be about 10,000. The following table ſhews the mortality, registered under the heads *decline* and *conſumption*. But it is to be obſerved, that the ſame ſources of inaccuracy exiſt here, as in the London accounts. The perſons (moſtly of the lower claſs) who report the deaths, refer every complaint of ſlow progreſs and attended with emaciation, to conſumption or decline. Conſequently, the number under this head is greater than of thoſe whom real phthiſis pulmonalis cuts off. Many alſo are interred at different burying-places, and of courſe not regiſtered. But there is no reaſon why the latter circumſtance ſhould be ſuppoſed to affect the proportions.

Years.	*total deaths.*	*by consumption or decline.*
1790	158	56
1791	202	104
1792	215	90
1793	235	107
1794	213	108
1795	215	127
1796	216	91
	1511	683

What may be collected from private practice, does not, I believe, in any respect, tend to invalidate the conclusion, deducible from these statements.

The disease is seen sometimes to perform an operation nearly the reverse of decimation, leaving alive one or two members only out of a large family. I was, not long since, consulted for a phthisical girl, who had lost six (that is to say, all) her brothers and sisters in the same way. There lies before me a letter, describing the phthisical symptoms of a young person (the last of his name) and containing a list of father, mother, two sisters, and a first cousin, who in consequence of simi-

lar attacks, had followed one another to the grave in the ſpace of about five years. Theſe are far from being all the inſtances I have known; and ſcarce a phyſician of moderate experience, but muſt have met with inſtances equally deplorable.

Could a general aſſembly of Britiſh parents be convened for the mutual communication of family diſaſters, originating in this ſource, how many thouſands might with very little variation, adopt the language of Neſtor, when he ſpeaks of the havoc occaſioned among the Greeks, by the war at Troy!

——— καλεκταθεν 'οσσοι 'αριστοι·
Ενθα μεν 'Αιας κειται 'αρηιος, 'ενθα δ' Αχιλλευς,
'Ενθα δε Πατροκλος, θεοφιν μηςωρ 'αταλαντος
'Ενθα δ' εμος φιλος 'υιος ———

Shall I the dire diſtreſſful ſcenes review;
And open all a parent's grief anew?
Trace the long roll of death, and, ſorrowing, tell
How, mark'd by fate, the beſt and loveliest fell?
- - - - - - - - - - - - - - -
- - - - - - - - - - - - - - -
There Ajax huge, Achilles there the brave,
And young Patroclus found an early grave;
There too my child ——

It would perhaps be poſſible to approximate towards an eſtimate of the number of Britiſh families in opulent circumſtances, infeſted by this diſeaſe. The members of the two houſes of parliament, who have loſt either father, mother, brother, ſiſter or child, by conſumption, could, I ſuppoſe, be aſcertained without much difficulty. Now the proportion would probably apply pretty nearly to the gentry at large, their reſpective habits and conſtitutions not being materially affected by the difference in wealth.

The fatality and frequency of conſumption are better underſtood than its ſeverity. Writers of romance (whether from ignorance or becauſe it ſuits the tone of their narrative) exhibit the ſlow decline of the conſumptive, as a ſtate on which the fancy may agreeably repoſe, and in which not much more miſery is felt, than is expreſſed by a bloſſom, nipped by untimely froſts. Thoſe who only ſee the ſufferers in paſſing, are

miſled by the repreſentation. And I have heard many perſons thus prepoſſeſſed, after cloſely attending a ſick friend, declare their ſurpriſe not leſs than their horror, at the unexpected ſcenes of varied and protracted miſery which they have been condemned to witneſs.

To lead the imagination through ſome of theſe ſcenes, might have its uſe in creating a ſalutary alarm. But I feel myſelf totally unequal to the taſk. I do not ſpeak of the difficulty of noting down the obvious ſenſible tokens by which the calm practitioner of medicine may recognize the complaint in its various ſtages—this is eaſy enough, and authors do it every day, as monks count their bead-roll—but of the difficulty of bringing out all the patient's feelings into diſtinct relief, and delineating a picture which a parent, freſh from the loſs of a child, ſhall acknowledge.

The ſhort teazing cough at firſt, provoked by inceſſant tickling in the throat, as if the minute fragment of ſome extraneous body had immoveably fixed itſelf there; the ſubſequent hard rending cough, attended ſometimes by retching and vomiting, ſometimes by ſtitches which neceſſitate the moſt violent ſtruggle againſt the continued ſolicitation to cough, and ſeverely puniſh a moment of inattention; the expectoration ſometimes nauſeous, always offenſive to the eye and harraſſing when it is not free; the languor with which the patient finds himſelf overpowered, when his attention is not occupied by ſome among his various fixed or flying pains; the extremes of cold and heat through which he is carried by the daily returns of hectic; the ſweats in which his repoſe by night drenches him; the breathleſſneſs on motion or without motion, ariſing by degrees to a ſenſe of drowning, and terminating in actual drowning,

when there is no longer ſtrength to bring up the fluids, ſecreted in the cheſt; the diſorder in the bowels, towards the laſt always threatening, and finally unreſtrainable, while it cuts off thoſe indulgencies which the very thirſt it creates or aggravates impatiently demands;—theſe are but a part of the torments under which the phyſician, during his tranſient viſit, in an immenſe majority of inſtances, ſees the conſumptive labouring. And what are the few minutes of a phyſician's call, compared to the whole twenty-four hours, lengthened out as they often are to the tenants of the ſick chamber, by pain and incapability of amuſement on one ſide, and by tender concern on the other?

Into the catalogue of evils flowing from any cauſe, thoſe that affect the by-ſtanders ſhould be received, as well as thoſe that affect the principal party. Thus in the early ſtage of conſumption, how painful muſt it be to perceive female delicacy,

vainly ſtruggling againſt an increaſing, inexorable diſeaſe, and to have the avowal extorted partly by affectionate urgency, partly by diſtreſs! After the full diſcloſure is made, how horrible (according to circumſtances and the character of the medical attendant) for the parent to liſten to his frank explanation, to ſearch for the hidden meaning of his looks, or to pierce through his clumſy diſſimulation! The deſpondence which (whatever is ſaid to the contrary) the ſick not unfrequently expreſs, is miſerable. The ſanguine hope which an hour of ſunſhine commonly excites, is more miſerable ſtill. What is worſt perhaps, is the knowledge of the patient's inſecurity, during theſe intervals of eaſe! The ſtorm of ſymptoms, that has ſo often broken in at once upon the moſt apparent ſettled calm, allowing the watchful friends no reſpite from their anxiety. And how ſhocking at laſt (under a conſciouſneſs that the event will give the heart

a blow from which it can never fully recover) to be driven to call upon death to close the long series of sufferings!

PLAN of the ESSAY.

Such is the aspect under which pulmonary consumption has often presented itself to me, both as an observer of diseases, and a sharer in the calamities, incident to humanity.—Nor would I run the risque of reviving grief, or exciting apprehension, but for reasons that after mature deliberation appear conclusive. I am thoroughly persuaded of the practicability of preserving numbers who but for proper management must perish prematurely. Let those who need it, be clad in defensive armour, and they may defy the rage of this devouring monster, that stifles at

his leiſure the ſons and daughters of the land. I am equally perſuaded of the impoſſibility of attaining the end in view, unleſs the means be promulgated in the interior of families. By the occaſional counſel of phyſicians, experience proves how little has been effected; nor would their occaſional counſel be of much greater avail than it has heretofore been, though phyſicians were as numerous as we find the adviſers of phyſic, and each were endowed with the ſkill of the god Æſculapius.

The full undiſguiſed truth ſeems neceſsary to incite people to have recourſe to the means of preſervation. Authors of prophylactic medicine have undoubtedly a right to repeat the charge (ſo ſtrenuouſly urged by the expounders of religious myſteries) of inattention to thoſe concerns in which men are moſt deeply involved.

But the principal circumſtance (namely, the dreaded event) is not to be concealed. The daily experience of life would ſuffi-

ciently reveal it, though books had been ſilent. The great ſelf-deception practiſed by the conſumptive is in refuſing to take the caſe to themſelves. Amidſt all their ſufferings, *they are not in a conſumption! their cheſt may be tender, but their lungs are still untouched!* Under the diſeaſe fully formed I have ſeen no inconſiderable number of medical men deluding themſelves with this hope, which the ſimilarity of comparatively ſlight indiſpoſitions in the particulars of cough, expectoration and feveriſhneſs, ſupported; and which I certainly did not feel it incumbent upon me to extinguiſh.

Whether the portion of miſery I aſcribe to conſumption, correſpond to the ideas of others or not, it is unqueſtionably large enough to render the prevention of the complaint moſt highly deſirable.—The plan which I ought to adopt in delivering what I have to ſay appears moſt perfectly obvious. It is my buſineſs to omit nothing

calculated to rouſe vigilance, or to render the meaſures to be purſued, clearly comprehenſible. Nor ſhould I introduce any thing but what in my own opinion, conduces to one or other of theſe ends. All diſquiſitions of mere curioſity therefore—all conſiderations of which the medical practitioner only can avail himſelf, I ſhall paſs over. Hence, I ſhall not touch upon the diſpute concerning the daily double exacerbation of hectic fever, nor ſhall I examine the opinions of others concerning tubercles, or propoſe my own ideas at any length.

In ſearch of facts, applicable in the ſequel to my ſubject, I ſhall firſt engage in a brief enquiry concerning thoſe countries and claſſes, that enjoy more or leſs of exemption from conſumption. Could a doctrine of exemption be eſtabliſhed, it might furniſh ſomething uſeful by way of moral. If we could diſcern the circumſtances on which exemption depends, we

ſhould only have to adopt them as nearly as poſſible into our own conduct. On the other hand, if it ſhall appear that there are whole deſcriptions of perſons more liable to the complaint, we may ſtand a chance of collecting from their hiſtory a leſſon equally uſeful, concerning the habits to be avoided.

It would have been doubtleſs more ſimple to lay down a ſyſtem of rules. But in a perſon who is conſcious that he has not a thorough knowledge of cauſes and effects, this would argue too great preſumption. Nor would his authority be effectual to the obſervance of his precepts, unleſs he was known to poſſeſs, as well as poſſeſſed, that neceſſary qualification. It would not indeed, be eaſy to comprehend the variety of ſituations in a ſet of rules; but the principles once known, rules for the occaſion may be eaſily deduced. It ſeems therefore, in every view, ſafer not to lay down concluſions without their premiſes.

The precept of Horace—

—— Nonum prematur in annum

appears to me pernicious in the extenſion often given it. The ſeeds of ſcience will at times fructify more abundantly in many minds than in one. They cannot therefore, in ſuch caſes, be too ſoon caſt abroad. On the preſent occaſion, however, I thought it due to thoſe who may be diſpoſed to follow my ſuggeſtions, to take a conſiderable time for the reviſion of my materials. In the ſame ſpirit of caution, I ſhall every where adhere to groſs, palpable facts, refraining from all attempts to penetrate by conjecture into the hidden workings of the animal machine.

I ſhould perhaps have ſtill longer delayed the publication of theſe papers, had I not ſuppoſed the lately aſcertained means of cure (in ſome circumſtances at leaſt of true conſumption) likely to awaken curioſity to the whole ſubject. The ſituation

of Europe has alſo its weight in urging me forward. Not only is *the night coming when no man can work*, but I am apprehenſive likewiſe that *the tempeſt is gathering, which may ſweep away the workman together with his work.*

CLIMATE.

The relation of climate to conſumption forms an important article of inveſtigation. In touching upon it, I hope to throw out ſome obſervations which may be of uſe to thoſe who are at a loſs to determine upon the propriety of removing abroad. It is deſireable on every other account to determine how far the inhabitants of certain countries are exempt from the viſitation of this calamity. Such information may aſſiſt us in eſtimating the influence of our own climate

and in guarding againſt any injurious qualities it may have. But as the preſervation of mankind has never been judged worthy of thoſe grand, ſyſtematic meaſures which are inceſſantly employed for their deſtruction, we do not poſſeſs a proper ſtock of comparative knowledge: nor could it perhaps be acquired but by the public eſtabliſhment of *missionaries of health* in different regions of the globe, or by unremitting efforts on the part of opulent bodies. In the ſcattered and diſcordant teſtimonies of caſual obſervers it is difficult completely to acquieſce. Thoſe, whoſe opinions we find in books or hear in converſation, have ſeldom made it their ſtudy to acquire an accurate idea of the proportional prevalence of diſorders in various countries; and their deciſions ſometimes ſeem formed from the vague recollection of the moment. Men will often perforce appear not ignorant of things they have never conſidered.

On queſtioning medical practitioners from the Weſt Indies, I have ſometimes been informed that conſumption is by no means an infrequent diſeaſe, whereas others (and particularly perſons not belonging to the profeſſion) aſſert that it is almoſt wholly unknown, in confirmation of which opinion medical writers may be quoted.

The ſtriking (and as I conclude from internal evidence) exact picture of the Creole women, drawn by the hiſtorian of the Antilles, induced me to propoſe to him the two following queries. 1. *Whether*, (as I had inferred from their other traits) *they have not in general large pupils?* and 2. *whether* (as is, I believe, the common opinion) *they are not very liable to conſumption on reſiding in England?* The anſwer, which runs as follows, involves Mr. Edwards's opinion concerning the fact I am conſidering: — "According to the beſt "of my obſervation, I muſt anſwer both

" of your queries concerning the native
" females of the Weſt Indies in the af-
" firmative—I think a large pupil is a
" very general feature among them; and
" I underſtand that they are very liable
" to conſumption on coming to England.
" In their native country, conſumption
" is almoſt unknown."

" Southampton,
" 13 July, 1797." " B. EDWARDS."

Mr. Edwards's deſcription of the Creole females I ſhall probably hereafter have occaſion to quote. In the mean time his letter, when it is conſidered how categorically the laſt ſentence is expreſſed, will go far towards ſettling the preſent point of enquiry. It is a caſe in which, I confeſs, extra-profeſſional teſtimonies have great weight with me. There is no man of the moſt moderate information who does not know that in this country the ravages of conſumption form part of the hiſtory of innumerable families. If the diſorder were

not of rare occurrence in the Weſt Indies, the fact could not be unknown to a perſon of Mr. Edwards's intelligence.

The obſervation, that among the negroes conſumption is apt to ſucceed pleuriſy, goes ſome way towards reconciling the differences of aſſertion, and ſeems to vindicate the climate, though at the expence perhaps of the practitioner. This variety of conſumption at leaſt ſcarce occurs here, but from miſmanagement of the primary diſeaſe. Hence we are leſs in pain concerning it.

From the praiſes which antient and modern writers have beſtowed upon Egypt for its ſalubrity, it may be preſumed that conſumption is little known there. The ſame obſervation will probably apply to Bengal and to all latitudes where a regular high temperature prevails. If dryneſs be added to conſtant heat, there will be hardly any exceptions.

Of PORTUGAL, ITALY, MADEIRA.

A phyſician who lately reſided two ſucceſſive winters in Portugal informs me that conſumption is frequent among the natives ; and that at Liſbon it is a common expedient to ſend patients to the other ſide of the Tagus. His obſervations convinced him of the ſmall efficacy of the climate ; and I hope that he will ſoon publiſh them for the benefit of his countrymen. The evidence of other phyſicians has generally, though not always, corroborated that of this obſerver. My own intercourſe with invalids leads me to attribute much the greater part of the benefit, whatever may be received, to the ſea voyage, of which the effect is ſeldom perhaps ſufficiently diſtinguiſhed from that of the climate.

The following inſtance occurred to me in the courſe of the preſent winter. I relate it becauſe it probably leads to a juſt eſtimate of many of the caſes in which it is ſaid in the circle of a perſon's acquaintance: *Mr. — was dangerouſly ill of a conſumption, for which he went to Lisbon and recovered.*

Lieutenant B. complained of a violent cough, which was attended with expectoration of purulent matter, with hectic fever and great emaciation; ſymptoms which he aſcribed to hard ſervice in Ireland. He had been adviſed to take a ſea voyage, to which I encouraged him. He embarked for Liſbon, and within a day's ſail of his deſtination, was taken by a Spaniſh cruizer. He was almoſt immediately retaken and carried back to England. His ſymptoms had ſubſided during his voyage out. On his return, which happened during the ſevere froſt he was ſtrong enough to work with the ſailors, which he often did

for the ſake of the warmth created by the labour, as he had been plundered even to his great coat. Had this gentleman arrived in Portugal and the removal of his complaint been permanent, which frequently is not the caſe though it may be ſuſpended during a voyage, the fact might eaſily have been placed to the credit of the climate.

From the medical literature of Italy I conclude that we may rank conſumption among the common diſorders of that country. Italian phyſicians often make it the ſubject of their publications; and the numerous caſes, which ſome of theſe authors have deſcribed, read preciſely like reports concerning Britiſh invalids. The attack is at firſt, as with us, miſtaken for a common catarrh and attributed to cold, operating on a ſcrophulous conſtitution. It often falls upon relations in ſucceſſion. The hiſtories of conſumption frequently ſet out in terms like the following: "Carolo Bor-

" ghetti, aged 18, being employed in " the winter in falling timber and having " frequently heavy burdens to carry home, " was ſuddenly ſeized with a violent " cough, which he neglected as a com- " mon cold."—" Sig. Antonio Mora, of " Riva, aged 29, narrow cheſted, had " been affected in his youth with ſcro- " phula. It was his cuſtom to travel, " and often on foot, however bad the wea- " ther might be. In the beginning of " 1787, after one of his uſual journies, " he was attacked with a violent cough, " which he neglected as a common cold." —" The daughter of Sig. Antonio Mu- " zio, aged 18, of a full temperament and " of perfectly healthy parents, frequently " expoſed herſelf, after dancing, to ſud- " den cold." — *(Canella Oſſervazioni in Eyerel's abridged tranſlation. Vienna.* 1795, *caſes* 25, 33, and 35 *of the* 1*st ſeries)* Caſes 6 and 36 are of ſiſters: caſes 29, 30, 31, 32, of brothers and ſiſters, the two firſt

deſtroyed by conſumption, the two others by ſcrophulous diſeaſes.

What greatly ſtrengthens the opinion, in ſupport of which I make theſe references, is a remarkable controverſy that has taken place within theſe few years. Dr. Salvadori publiſhed in 1787 a plan for the treatment of conſumption which he profeſſed to have combined from the works of Hippocrates, Bennet, and Sydenham *(Del morbo tiſico, libri tre di Matteo Salvadori, Trient.* 1787, 4*to.)* Diſcarding medicine and all exactneſs of regimen, Salvadori directs his patient in the morning to climb, as quickly as he can, up ſome eminence, till he is out of breath and bathed in ſweat and then to place himſelf near a large fire to increaſe the perſpiration. He is afterwards to change his linen, and gradually withdrawing from the fire to partake freely of ſalted meat and wine. No work upon conſumption has probably ever excited a greater ſenſation in England than this did

in Italy. A hoſt of adverſaries took the field againſt Salvadori. Some criticiſed his quotations and endeavoured (I think ſucceſsfully) to ſhew that he had perverted the ſenſe of the authors (*Diſamina sulle autorità d'Ippocrate, de Sydenham e di Bennet, dal S. Dott. Salvadori in ſuo favore recate, Mantoua* 1791). Others oppoſed him by clinical facts, as Dr. Canella in the work before quoted, to whom Dr. Fontana and Dr. Ribbia aſſociated themſelves.

No acquiſition, I fear, accrued to medicine from the diſpute. But it ſeems to ſhew what great intereſt was felt in the ſubject both on account of the fatality and frequency of the diſeaſe. The agitation, even in modern times, of the queſtion concerning the contagious nature of phthiſis, in which Bertrandi (*on ulcers*) Caſtellani (*Insussistenza della Tisichezza*, 1777) Narducci (*sopra il contagio della Tisichezza*, 1785) and writers in the *Magaſino Toſcano* take oppoſite ſides, tends to confirm the ſame idea.

Conſidered therefore with regard to their influence on the natives, the climates of Portugal and Italy do not form ſo very ſtriking a contraſt with our own. Countries warmer than Great Britain in winter, and equally warm, may be in a ſlight degree beneficial. But we can rarely expect temperature alone to heal ulcerated lungs, or to prevent ulceration when it is very near at hand. The number of permanent recoveries bears but an exceedingly ſmall proportion to the whole number of phthiſical perſons ſent abroad. And when we abſtract the advantages from ſailing and from travelling by land, very little will remain to the climate. From June to October, the Engliſh air is probably as ſalutary to natives as that of any country in the world. But we never obſerve during our ſummer any ſpontaneous cures of confirmed conſumption. It is true that in July, Auguſt and September the foundation of the diſorder is laid much more

rarely than in the other months. And a country, where the weather is ſuch in winter, as it generally is with us from the ſummer ſolſtice to the autumnal equinox, would be a reſidence highly proper for perſons, diſpoſed to conſumption, and would afford thoſe who had been recovered by a ſea-voyage or any other cauſe, ſome ſecurity againſt a relapſe. But few ſpots in Europe enjoy in winter a conſtant kindly temperature with a dry air, though I underſtand the ſouth of Spain approaches more nearly than any other, not even Hieres excepted, to this deſcription. But our climate with proper care will not perhaps in general counteract the operation of an adequate remedy, whenever that ſhall be diſcovered.

The advantages of Madeira as a reſidence for the conſumptive are far from eſtabliſhed. In phthiſis far advanced I have known recovery the conſequence of a voyage thither. But all the ſymptoms had diſappeared before the patient's arrival. I have

it from a medical friend, who reſided there ſome months, that ſcrophula and conſumption are by no means uncommon. Two, as I am credibly informed, among the Britiſh ſettlers—perſons who did not go out as invalids—have died of conſumption within theſe twelvemonths. A reſident lady of delicate health has lately fallen into the diſorder. This proportion would be reckoned not inconſiderable even in Britain. So little of preſervative power does the iſland poſſeſs! Indeed the wetneſs of its atmoſphere appears to counterbalance the admirable uniformity of its temperature. The incommodiouſneſs of its roads and other diſadvantages are ſufficiently known. Dr. Gordon, under whoſe care ſome conſumptive patients were placed in Madeira by Sir John Pringle and others, (as appears from his letter, publiſhed in Dr. Read's treatiſe on conſumption) diſcouraged the practice.

CLASSES EXEMPT.

As I cannot but feel apprehenſive leſt ſome of my readers ſhould conclude from the titles of the ſections, immediately ſucceeding, that they have no intereſt in the contents, I think it neceſſary to apprize them that I hope to be able to produce a ſeries of facts which ſhall connect the ſtate of health of the rudeſt with that of the moſt refined among our countrymen, and clearly unfold the cauſes of the ſtriking difference that ſubſiſts.

This part therefore of the enquiry will bring us immediately to the knowledge we want. For if it can be aſcertained that whole deſcriptions of perſons, agreeing with one another in certain particulars, enjoy a nearly total exemption, and that in theſe very particulars they differ from

the deſcriptions that ſuffer moſt, we ſhall have determined with great probability ſome of the remote cauſes. The reaſoning will be ſtrongly corroborated if it ſhall be found that thoſe who in relation to the ſame particulars, come neareſt to the exempted claſſes, are proportionally exempt.

BUTCHERS.

In a letter from Dr. Withering written in 1793 which he allowed me to publiſh, it is remarked that " the only claſſes of men he had yet obſerved exempt from the diſeaſe (conſumption), are butchers and makers of catgut. They both paſs much of their time amidſt the ſtench of dead animal matters, the latter very much ſo ; the former live chiefly on animal food, and are much expoſed to the

inclemencies of the ſeaſons, whilſt the latter live as other manufacturers, and work under cover in cloſe and rather warm buildings. Theſe people are always ſleek, often fat, and the roſy bloom of health adorns their cheeks." (*Letters from Dr. Withering, and others, to Dr. Beddoes, Johnſon*, 1793.)

Concerning cat-gut makers no ſubſequent information has reached me; but I have ſince heard ſoap-boilers claim a ſimilar privilege. In the caſe of the numerous tribe of butchers, the fact if true, could, I thought, without difficulty be aſcertained. The following is the reſult of my attempts to aſcertain it.—I requeſted a gentleman accuſtomed to the butchers of Briſtol, to examine them generally concerning the healthfulneſs of their calling, and by no means to put his queſtions ſo as to prompt a negative regarding conſumption. The notes he took run literally thus:—

" July, 1797, S——, has been in buſineſs nine years—never had but two perſons in that time employed in the ſlaughter-houſe, both of them always in health; live on beef-ſtakes, mutton-chops and other meat as often and as much as they pleaſe; drink large quantity of malt-liquor, ſeldom ſpirits.

G——, thirteen years in buſineſs,—" Lord bleſs you Sir, die of a cough! why I never heard of ſuch a thing; every one knows that the " ſmell of meat" keeps off infection. Why, my huſband has often taken ſheep into gentlemens' bed-chambers, and if you will read, you will find when the plague was here, all the butchers eſcaped—never knew any of our men a moment ill."

F——, a well-informed man; had a man die about ten months ago of a conſumption, coughed exceedingly; got his illneſs by ſtraining himſelf in carrying quantities of beef, and then he took to

ſpirits and drank them moſt exceſſively: "he died certainly of a conſumption:" worked little in the ſlaughter-houſe after this accident. Wages 5s. per week, and every thing found them; plenty of beef and mutton at all times of the day. "I am ſure the breath of the beaſts is good, no people are ſo free from diſorders as we are."

B——, thirty years in buſineſs, does not recollect any man dying in his ſervice. He has had three or four apprentices at a time; they live well; eat hot meat for breakfaſt, broth and onions; knew a boy die next door in the ſlaughter-houſe, but in conſequence of ill uſage; he never had any thing the matter with himſelf.

B——, fourteen years in trade. "I never heard of a man dying of a conſumption who was a butcher. After a ſheep is dead, it is very wholeſome to ſwallow the ſteam, the ſmell of meat keeps us from diſorders."

M——, twenty-five years in trade,

had a ſon nineteen years of age die of a conſumption, he did not attend to the buſineſs but to the farm ; never had any one die who worked for him. Has now ſame men who have been many years with him, and never ill a moment ; drink very hard. " Sad drunken beaſts all of them." Knew the man well, alluded to by F. he had a ſhocking cough, and was always drinking drams.

I find there are about five hundred perſons here employed in the trade. I have examined a number of inferior butchers whoſe anſwers I have not ſent. They tally ſo exactly with thoſe of the beſt informed."

From Dr. Pearſon of Birmingham, I received the following anſwer to a general query concerning the perſonal condition of butchers : " Agreeably to your deſire I ſend you the reſult of my enquiries concerning the diſeaſes to which butchers are *moſt*, and to which they are *leaſt* liable.

Among the *first* may be reckoned obeſity, hepatic obſtructions and ſometimes hepatic inflammation; apoplexy: among the *ſecond*, phthiſis pulmonalis and typhus.

Though pulmonary conſumption occurs leſs frequently among this claſs of men than among those who follow other kinds of buſineſs, yet they are often attacked with catarrhs. I remember alſo an inſtance or two of pleuriſy and peripneumony; and one of whom I ſometimes purchaſe meat is likely to be an exception to what I have before remarked, there being in him ſome tendency to conſumption.

Where I have noticed aſthma in butchers, it has generally been the concomitant of obeſity."

From Mr. Creaſer, Surgeon of Bath, to whom I put a general queſtion concerning the diſorders to which the butchers of that city are ſubject, I received the following anſwer: "In conſequence of a

ſuggeſtion from you which I ſuppoſe to be connected with ſome former opinions on phthiſis, I have been at ſome pains to enquire what were the particular conditions both of the health and diſeaſes of butchers, as they are a claſs of men whoſe occupations are in many reſpects under different peculiarities.

I cannot find that they are liable to any very peculiar affections either acute or chronic, but there are certainly ſome of the diſeaſes of both kinds to which they are leſs than uſually liable. Of the acute diſeaſes they have rheumatiſm, fever and catarrh, from the cold and moiſture to which they are continually expoſed, and the conſequent changes of temperature. The rheumatiſm and fever are generally mild, and the latter does not ſeem to be of the kind produced by putrid vapour, which they occaſionally inſpire when the animal ſubſtances around them putrefy, but to which they become probably inſen-

ſible by habit, as nurſes in hoſpitals are to the common contagion of fever. It is an undoubted fact, that catarrh in butchers ſcarcely ever ends in phthiſis: I have aſcertained this by enquiring of ſome of the oldeſt amongſt them, who were perfectly capable of recognizing the diſeaſe.

They are expoſed to the common chronic diſeaſes dependent on the uſe and abuſe of fermented liquors, in which they generally indulge freely; but they think themſelves leſs proportionably injured by theſe exceſſes than other artificers; whether this is hypothetical, I cannot decide, but it is their own general declaration.

The numbers of whom I have enquired are ſufficient to decide on the average frequency of ſcrophula, and this is certainly comparatively rare, as I have examined ſeveral who poſſeſſed the temperament which appears to conſtitute the prediſpoſition, but in whom the diſeaſe did not exiſt; they aſſerted alſo the rarity of its

occurrence. Quere---has this any connection with the ſuppoſed ſcrophulous nature of phthiſis ?

As the men are generally employed in the ſlaughter houſes, and as they are not ſo frequently the ſubjects of cancer as women, no concluſion on this point can be drawn.

Butchers, in their general health, are vigorous, and they have almoſt invariably the appearance of being well nouriſhed ; their children are commonly fair, healthy, and ruddy.

The obſervations I have made on this claſs of men are certainly inconſiderable, but they may excite further inveſtigation into the peculiar conditions of certain claſſes of men who are expoſed to the operation of known cauſes. Some of thoſe to which theſe people ſtand expoſed may be readily perceived. Mr. Plenck of Vienna in his hygrology of the fluids of the body, ſays, that the gas found in ſome of the cavities, and in the interſtices of the cellu-

lar ſubſtance of the body, is carbonated hydrogen: this therefore, in the diſſection of carcaſes, muſt be given off, as is alſo a conſiderable quantity of halitus of the different fluids of animal ſubſtances: theſe combined muſt conſiderably reduce the purity of the atmoſphere; but I think we are not quite ſufficiently acquainted with the effects of carbonated hydrogen to determine the conſequences of its continued application to living animals.---If I may introduce a fact which is rather foreign to the preſent ſubject,—I found in one inſtance where a patient died of a diſeaſe for which it was conſtantly adminiſtered, that the muſcles were perfectly flaccid after death, though I had no opportunity of opening the body to diſcover if the blood was coagulated. This I much wiſhed, as it would have contributed to eſtabliſh, or to create a doubt of, the truth of Mr Hunter's opinion, that rigidity of muſcular fibres after death, and the coagulation of

the blood, were connected actions. The obſervation of this fact may alſo in ſome degree elucidate the action of carbonated hydrogen.

To return to my immediate object; it is evident that butchers are not only ſurrounded by an atmoſphere of peculiar combination, but that they are within the ſphere of abſorption, by the hands and alſo the arms, of animal matter. The power of the external abſorbents in nouriſhing the body, and in the conſequent animalization of the ſubſtances abſorbed, is fully eſtabliſhed. To the operation of theſe cauſes, different effects may be owing, perhaps more extenſive than I have obſerved, but which I ſhould be happy to have inveſtigated, and particularly how far the continued inſpiration of carbonated hydrogen may contribute to the formation of fat in the living body, of which it conſtitutes the principal component part."

I thought it of importance to obtain a

ſtate of facts from Cork: and a friend was ſo obliging as to apply to Dr. Gibbings and Dr. Ronayne. Both exactly agree in aſcribing exemption to butchers. The letter of Dr. Ronayne, who ſeems to extend the ſecurity in ſome ſort to the woman, runs thus: "From my own obſervations, and from the opinion of the oldeſt of our diſpenſary phyſicians, I can aſſure you that the people concerned in the laborious part of the ſlaughtering buſineſs, are not ſubject to phthiſis pulmonalis. I have been near nine years in a very extenſive practice, principally among the lower orders of people, and I do not recollect to have ſeen many caſes of conſumption from diſeaſed lungs among the working butchers, or *their women.* The complaint of which the greater number die, is the bloody flux, attended with, or followed by, a diſeaſed liver, which we attribute to the quantity of newly diſtilled ſpirit they drink while at labour, and to the very bad proviſions with which they are fed."

Whatever probability may ariſe from the concurrence of ſo many teſtimonies, I could ſtill wiſh the enquiry to be purſued in London. If it were there attended by a ſimilar reſult, we ſhould then, I think, have full aſſurance of the fact. Occaſional veſtiges of the ſame obſervation may be traced in foreign writers. The author of a diſſertation on the propriety of placing phthiſical patients in ſlaughter-houſes (*Utrum in carnariis commoratio phthiſicis prodeſſe poſſit? Monſpelii*, 1788, *auctore C. F. R. Nadaud de Villette*), tells us he was led to the idea by obſerving the healthineſs of the butchers, their wives, and families, at Montpellier.

FISHWIVES.

In the 16th volume of the *Statistical reports of Scotland*, pp. 15—20, the follow-

ing facts are related: "The whole produce of the gardens (in the pariſh of Invereſh) together with ſalt, and ſand for waſhing floors, and other articles, till of late that carts have been introduced, were carried in baſkets or creels on the backs of women, to be ſold in Edinburgh, where after they had made their market, it was uſual for them to return loaded with goods - - - - - This employment of women - - - - - has occaſioned a reverſal of the ſtate of the ſexes in this pariſh, and has formed a character and manners in the female ſex, which ſeems peculiar to them, at leaſt in this country - - - - - - The women who carry ſand to Edinburgh have the hardeſt labour, and earn leaſt. For they carry their burden which is not leſs than 200lb weight every morning to Edinburgh, return at noon, and paſs the afternoon and evening in the quarry, digging the ſtones and beating them into ſand.

The *Fiſhwives* as they are all of one claſs

and educated to it from their infancy, are of a character and manners ſtill more ſingular than the former, and particularly diſtinguiſhed by the laborious lives they lead. They are the wives and daughters of fiſhermen who generally marry in their own caſt or tribe, as great part of their buſineſs, to which they have been bred, is to gather bait for their huſbands and bait their lines. Four days in the week however they carry fiſh in creels to Edinburgh, and when the boats come in late to the harbour in the forenoon ſo as to leave them no more than time to reach Edinburgh before dinner, it is not unuſual for them to perform their journey of five miles by relays, three of them being employed in carrying one baſket and ſhifting it from one to another every hundred yards, by which means they have been known to arrive at the fiſh-market in leſs than three quarters of an hour. It is a well-atteſted fact that three of them not many years

ago, went from Dunbar to Edinburgh which is twenty-ſeven miles, with each of them a load of herrings on her back of 200lb. in five hours---they ſometimes carry loads of 250lb.

There ſeems to be no employment that conduces more to health and good ſpirits than theirs. Some of them have been brought to bed and have gone to Edinburgh on foot with their baſkets within the week. It is perfectly well aſcertained that one, who was delivered on Wedneſday morning, went to town with her creel on Saturday forenoon following."

On the peruſal of this paſſage, I concluded, for reaſons which will hereafter fully appear, that the fiſhwives, on compariſon with their neighbours, would be found diſtinctly leſs liable to conſumption. My endeavours to procure exact information have been remarkably ſucceſsful; and I ſhall here give, what I have collected entire, being deſirous to deliver ſound

materials to my ſucceſſors in this important labour, though I ſhould fail in diſpoſing them properly myſelf. Dr. Roget, who was at the trouble of a perſonal enquiry, tranſmitted to me the following account: "My enquiries reſpecting the prevalence of pulmonary conſumption among the fiſhwives of Muſſelburgh, have been, from various circumſtances, delayed for a much longer time than I could have wiſhed. From what I have at length been able to collect, I have reaſon to believe that this claſs of women is leſs ſubject to the diſeaſe than the generality of poor people in this part of the country. I have made enquiries among the fiſhwives themſelves, and was in particular informed by one of them, who, I am told, is one of the oldeſt in the place, and who by her own account was married in the year 1746, that the occupation they follow is, on the whole, a healthy one. They conſume a larger proportion of animal food than their neighbours, and

they do not live much upon fiſh. Many of them are intemperate in the uſe of ſpirits. A ſmaller proportion of them arrive at old age, than of the other claſſes of people. The fiſhermen appear to be leſs liable to illneſs, and to attain a greater age than their women. The complaints, to which the latter are moſt ſubject, ſeem to ariſe from the exceſſive fatigue they are obliged to undergo: it does not, however, appear that they readily fall into conſumption. Few of them die at the phthiſical period of life. Coughs, ſpittings, pains in the cheſt, &c. I was told were very frequent; but from what I could learn they were chiefly prevalent among thoſe at an advanced age. The huſbands fall frequently under a ſtroke of palſy or apoplexy, victims to their own intemperance.—This account correſponded with that of ſeveral other fiſhwives with whom I converſed. They live much among themſelves; they are a ſhrewd and intelligent ſet of people;

and from the little intercourſe they have with their neighbours, unleſs in the way of trade, their manners are in many reſpects peculiar."

Mr. James Williamſon, ſurgeon at Preſtonpans, has communicated the reſult of his obſervations, in a letter dated July 27, 1798: "Reſpecting the general ſtate of health of the fiſhwives about Preſtonpans and Cockenzee, I can ſay from my own obſervation for theſe ſeveral years, that in general they enjoy as good a ſtate of health as any other perſons in the neighbourhood. The weight of their burdens varies according to circumſtances: it is almoſt incredible the burdens they ſometimes carry, and with great agility and quickneſs. Their diet conſiſts principally of fiſh and butcher meat, with ſmall beer, ſtrong ale, porter, and very often whiſky. As to their cloathing and mode of life, they do not differ materially from their neighbours.

There are no diſorders to which they are particularly ſubject, nor are they exempt from thoſe diſeaſes to which other people are liable. They are ſometimes troubled like other people, with catarrhal affections, but theſe I cannot immediately impute to their peculiar way of life; and I do not recollect a ſingle inſtance of any of the fiſhwives carrying fiſh to Edinburgh having conſumption.

With reſpect to their living a longer or a ſhorter time than their neighbours, I have made particular enquiry, and I do not find there is any difference."

In a letter from Mr. Kerr, ſecretary to the general poſt-office, Edinburgh, I find an article reſpecting the health of the fiſhermen. Mr. Kerr alſo agrees with my other correſpondents, reſpecting the diet of the fiſhing families: "Upon the receipt of your letter of the 26th of June, I went to the fiſhing village of Newhaven, where I was informed that conſumption

is hardly known among the fiſhermen there. One inſtance only was cited. As to diet, it conſiſts chiefly of butcher's meat boiled, ſo that their families as well as themſelves may have the benefit of the broth, which is mixed with various vegetables, of which they partake largely. As to fiſh, they uſe it ſo very ſparingly that it can hardly be conſidered as part of their diet. They uſe malt and ſpirituous liquors, but not to exceſs, being conſidered as a ſober and induſtrious people. I ſhall endeavour to get further information."

Mr. Kilgour, Surgeon, Muſſelburgh, in his very diſtinct anſwer (of July 11th, 1798) to my queries, not only confirms the accounts of my other correſpondents, but, as I ſhall have occaſion afterwards to ſhew, communicates particulars of great importance to the whole inveſtigation: "I have (ſays Mr. Kilgour) juſt now before me your letter, enquiring if pulmonary conſumption be a diſeaſe to which people

following the fiſhing trade are more or leſs ſubject than others. After a practice of thirteen years in this place, I can with confidence ſay, that it is a very rare complaint among them, and ſcrophula, ſuppoſed to be ſo much connected with it, is hardly with them ever known, although with others a very general diſeaſe here. From being ſubject to violent and laborious exerciſe, to frequent heats and ſudden cools of the body, with much expoſure to wetneſs and moiſture in ſtormy weather, theſe people (the fiſhermen) are peculiarly liable to pneumonic inflammation, catarrh, rheumatiſm, and cholic; and although both pneumonic inflammation, and catarrh, are ſtrong exciting cauſes of conſumption in thoſe prediſpoſed to it, yet in almoſt no inſtance have I found this to happen with them. What I have now ſaid concerning the occaſional cauſes of their diſeaſes, refers principally to the men of this claſs of people, when following

their buſineſs at ſea; but the women are ſubject to the ſame complaints from other circumſtances attending their trade. In order to ſell the fiſh their huſbands have caught, they in cold, warm, wet, or dry weather, carry from this place to Edinburgh an immenſely heavy load of them on their backs, with a celerity which is aſtoniſhing; and upon this occaſion a general race takes place, in order firſt to gain the market for the higheſt price; and this violent exerciſe at all ſeaſons of the year, neceſſarily produces all the diſeaſes ariſing from cold. From theſe frequent colds, their old people are peculiarly liable to that increaſed afflux of fluids to the lungs, which ſo generally takes place in advanced age; and they, upon being peculiarly expoſed and taking cold, frequently die of peripneumonia notha. This, I cannot help obſerving, moſt frequently happens to their women. In ſome very few inſtances, I have ſeen ſuch old people, who had long laboured

under this cattarrhus ſenilis, have all the characteriſtic ſymptoms of phthiſis pulmonalis, viz. exquiſitely formed hectic fever, and purulent expectoration, ſome conſiderable time before their death: but ſuch caſes are very rare. I wiſh here to have had it in my power to have given you an account of the ſtate of the lungs from diſſection, but the liberty of inſpecting the bodies being denied me, I cannot. Like all other people of a ſimilar rank of life, who have great gains from their labour, they live well, but I do not believe they uſe in their food a great deal of fiſh, of which being excellent judges, they chuſe principally the lighteſt and moſt delicate. While they do not eat a great number of fiſh, they live freely upon butcher's meat, and indulge after their meals in drinking copiouſly of porter, the more generous ales, and ſpirituous liquors; indeed were they not to live well, it is impoſſible they could ſupport the fatigue they undergo.

From this manner of living it is eaſy to be ſeen the habit of body, and the ſtrong prediſpoſition it muſt induce to peripneumonia notha, ſo frequently fatal to them in advanced life."

SAILORS, WATERMEN.

In 1792, I publiſhed ſome among a number of conjectures, which had occurred to me ſeveral years before, concerning the poſſible chemical origin of the ſea ſcurvy, and other complaints. I had been led to ſuppoſe, that notwithſtanding their expoſure, ſailors muſt be comparatively little liable to conſumption. Subſequent enquiry obliged me to abandon the hypotheſis upon which my inference was founded. But there is the authority of the preſent phyſician to the channel fleet for believing that the fact really happens

to be ſo. "Dr. Beddoes (ſays this intelligent obſerver), appears to me perfectly correct in ſuppoſing that ſeamen are very little troubled with phthiſical complaints. Conſumptions can ſcarcely be reckoned among their diſeaſes, although five-ſixths of the ſeamen in a man of war are of an age within the phthiſical period. Some caſes of conſumption have lately come under my obſervation, but they were few, compared with the number of the fleet and the bad weather they had before experienced;" (*Trotter's medical eſſays.* 1795. p. 30). From the ſmall proportion of phthiſical ſeamen, ought to be excepted, as not conſtitutionally phthiſical, many whoſe lungs become ulcerated from external violence. From the nature of a ſea-faring life, this portion muſt, I ſhould imagine, be conſiderable. By Dr. Lind, who was long phyſician to a naval hoſpital, we are informed, that of 360 conſumptive patients whom he attended within two years, the

complaint was brought upon one fourth by falls, bruiſes, and ſtrains, received a year or two before (*Lind apud Ruſh med. enquiries* 11, 89.) It is well known that ſailors are very ſubject to catarrh, to rheumatiſm, and other diſorders, the produce of temperature.

On the authority of an intereſting manuſcript on the keel-men (or coal-boatmen) by Mr. G. Grieve, of Newcaſtle upon Tyne, I have placed watermen under the ſame head with ſailors. In this paper it is related, that the common food of the keelmen, for more than a century paſt, has been boiled mutton, or roaſted lamb in their ſeaſons, the fatteſt which the market could afford, dreſſed once or twice a week, and eat cold on board;—that they uſe the fineſt wheaten bread;—that fiſh forms but a ſmall part of their diet;—that the influence of the tides upon their employment renders their meals irregular; but that they eat the more on this account, each man's

daily conſumption amounting to about three and a half pounds of butcher's meat, with bread and ſtrong beer in proportion ;--that their labour is always conſiderable, and that part of it which conſiſts in unloading the keels up into ſhips, exceſſive, and would be inſupportable, but for the ale or beer that is ſerved to them by the ſhipmaſters, according to eſtabliſhed rule;--that (contrary to what might be expected) there are many robuſt old men among them ;---that no claſs is more healthy ;---that the *labouring* period of a keelman is from forty to ſixty years, and often more;---that, probably on account of their inſulation, they are leſs liable than others to epidemic complaints ;---that rheumatiſm in ſpring and autumn is their chief complaint ; and that this is leſs frequent ſince the uſe of flannel next the ſkin. From the whole tenor of the account, as well as its ſilence with regard to ſo prominent a diſorder, I conclude that to this race of

watermen, conſumption muſt be little known.

" Stable-boys and grooms (Dr. Withering obſerves to me), who live much in an atmoſphere loaded with volatile alkali, are I believe, but little liable to conſumption; but this opinion ought not to be fully admitted without the ſupport of more extenſive obſervation.---Snuff-taking, ſays the ſame correſpondent, is ſo little the mode of the preſent day, that my opportunities of obſervation have been inſufficient. I have aſked the queſtion of ſome of our medical friends at Edinburgh, where ſnuff-taking is more general than with us, but have had no ſatisfactory reply---I have recollection of one ſnuff-taker who caught the diſeaſe from a cloſe attendance upon his brother, which does not tell in favour of ſuch people being exempted."

I ſubmit it to obſervers, whether menſervants, gardeners, the families of ſuch ſmall farmers as cultivate their lands, and

nearly conſume its produce themſelves (by which deſcription ſome remote diſtricts are ſtill cultivated) are not among the perſons leſs liable to conſumption. That ſmall farmer's families enjoy this advantage in ſome degree, I have reaſon to ſuppoſe from my own obſervation in the vales about Rhadyr in Radnorſhire, where their labour ſeemed moderate, and their food nutritious. The enquiries of a friend in the country about Tan-y-bwlch in North Wales, countenance the ſame opinion. But it requires a ſtricter ſcrutiny. I have in vain endeavoured to procure more correct information from profeſſional perſons in the former diſtrict; and ſhall be very glad if by ſtarting the queſtion here, I ſhould procure a ſatisfactory ſolution.

I ſhall below endeavour to analyze the foregoing facts. And wherever perſons ſhall be found approaching to the claſſes I have enumerated, in the circumſtances common to them all, I expect

with confidence, that they will on examination, be found equally free from conſumption.

PERSONS MORE LIABLE TO PHTHISIS.

We have ſeen how often external injury produces the diſeaſe. It has been frequently obſerved to ariſe from hard bodies, as bone, needles, fragments of the ſhells of nuts and of other fruits, received into the wind-pipe. The fate of ſtone-cutters and needle-grinders is well known. Linnæus (*Amoen. acad.* viii, 159) ſays, that the cutters of grinding-ſtones almoſt all die phthiſical before their thirtieth year. The tenuity of the hard powder inhaled by the workmen ſeems not to diminiſh its pernicious quality. Dr. Withering (*letter* p. 15,) obſerves that caſters of fine braſs-work

much oftener die conſumptive than "any ſet of artiſts in Birmingham." Playing on wind-inſtruments is known to injure the lungs. Fifers on board ſhips of war, who accompany the drum at ſtated hours, and play quick marches when any piece of duty is going on, that requires hoiſting, are apt to become conſumptive. (*Trotter's eſſays*, p. 29). Miners in ſome ſituations, whether from external injury or cold, experience the ſame fate. But ſlight notice of ſuch facts is ſufficient. Safety lies in change of occupation, and it is in vain to think of ſafety while men are bound to ſuch as theſe by real or imaginary neceſſity. My ſearch is after cauſes more inſidious; and if it be ever ſo ſucceſsful, I cannot expect that its benefits will extend much beyond the claſs whom their wealth leaves free to chooſe a mode of life.

To prevent groundleſs alarm, it ſhould be added, that japanners, who work in an atmoſphere of reſinous vapour, are not

more ſubject to conſumption than others. The ſame is proverbially ſaid of millers; ſo that powders exceedingly ſoft, or eaſily decompounded, ſeem not, either directly or indirectly, to occaſion ulceration of the lungs.

It is of importance to obſerve, that artiſans, whoſe occupations and habits are oppoſite to thoſe of the perſons mentioned in the preceding ſections, ſtand alſo in an oppoſite relation to conſumption. It is perfectly well known, that taylors, glovers, ſhoemakers, weavers, ſpinners, carpet-manufacturers—all in ſhort, who follow ſedentary occupations in confined rooms, whatever be their habitual poſture, or the ſtate of the atmoſphere they breathe with regard to ſmall floating particles—are extremely liable to this fatal diſeaſe. I could mention places which have been in bad repute on account of their ſituation, but of which, when circumſtances have been accurately explored, it has appeared that

confinement and inactive employments have given rise to their endemic pulmonary disorders (Agassiz *Diss. de causis* phthiseos localis frequentioris *occasionalibus Erlangae.* 1791).

ANIMALS CONSUMPTIVE.

The same law extends to brute animals. Some brute animals, as dogs, seem (unless under very uncommon circumstances) by some unknown peculiarity of their constitution, exempted from consumption. Others, as cows, are liable to this complaint; and when they are kept in certain situations, they suffer quite as much as the human species under similar circumstances. The fact has been very accurately ascertained with regard to the milch-cows

of Paris. (*Eſſai ſur la maladie, qui affecte les vaches laitieres des faux-bourgs et environs de Paris; par le C. Huzard, veterinaire.* Paris 1794). The cows, during the journey from the paſtures of Normandy, or French Flanders, ſuffer greatly from overdriving, and from the cruel methods employed to make the udder appear preternaturally large. From the time of their arrival, till they ceaſe to be milked, they are obliged to ſtand on one ſpot in the cow-houſe. In the city, the cow-houſes are extremely low, and the animals are ſo crowded, that they can neither turn nor lie down. By conſtant ſtanding, without exerciſe, the legs grow crooked, and the creatures not being able to ſtand perpetually, at laſt fall upon their knees, in which poſition they remain. Frequently the building has no window for admiſſion of freſh air, the door is hardly high enough to admit the animal, and is nearly blocked up by dung. The diet is as wretched as

the quarters, and the water ſuch as to be frequently refuſed.

A very uſual effect of this treatment, (for all the animals that fall ſick do not ſuffer exactly alike), is a hollow cough, with difficulty of reſpiration, fever, emaciation, and death. On diſſection, the lungs are found to be ulcerated, and full of tubercles. The offspring is liable to the ſame complaint, and in conformity with an opinion reſpecting conſumption in the human ſubject held by ſome phyſicians, many account it contagious.

For the reader's ſatisfaction, it is right to mention, that M. Huzard is reſpectably known by ſeveral publications on the complaints of domeſtic animals, and that an official ſituation enabled him to aſcertain the facts related in his *Eſſay on the diſtemper of the Pariſian milking cows.*

Dr. Soemerring, in his german work on the difference between the Negro and the European in bodily conformation, deſcribes

(pp. 73—77) three cafes of blacks, affected with inflammation, hardneſs, and ulceration of the lungs and the contiguous lymphatic glands; and adds, that he had on diſſection, found two apes and an elephant ſimilarly affected. It has been remarked by other authors, that apes, in our colder latitudes, are affected by ſcrophula and conſumption; diſorders to which we have no information that they are ſubject in their native climates.

Mr. Carliſle, one of our moſt diſtinguiſhed anatomiſts, has favoured me with the reſult of his obſervations on apes, and with ſome remarks on conſumption, which as they are contained in the ſame paper, I ſhall not disjoin. "I have often, (ſays he in a letter, dated July 30th, 1798), diſſected the monkies and apes, which had died at Exeter 'Change, with more minuteneſs than is neceſſary for the mere purpoſe of aſcertaining the probable cauſes of the creatures' death, becauſe I have

made many preparations of them to exhibit the courſe of the blood-veſſels, &c. I hardly remember to have examined one monkey or ape that was free from ſcrophulous ſtructure in the lungs: moſt of them had evidently died of true conſumption; ſeveral had ſcrophulous ulcers upon lymphatic glands, abſceſſes of the ſame deſcription, and moſt of them had the meſenteric glands affected with the ſame diſeaſe. I have often ſeen the creatures, when alive, emaciated, coughing, and expectorating matter, which however only exudes from the ſides of the mouth, as they do not ſeem to eject it. They alſo often ſwallow the pus, or rake it out of the mouth with their paws. The ſame difficulty of breathing as is obſerved in the conſumption of the human body, is equally noticeable in monkies.—I have reaſon to believe that your zeal for improving medicine will induce you to excuſe me for adding a few ſtraggling ſuggeſtions on this ſubject, and

to accept of them in the ſame ſpirit with which they are offered. I think my experience in the obſervance of diſeaſes, authorizes me to conclude, that few perſons afflicted with ſcrophulous affections of the ſuperficial lymphatic glands of the large joints or bones (when ſcrophula attacks theſe parts early in life), are liable to conſumption of the lungs.—This may be contrary to your experience; but I have been often diſappointed with finding the lungs ſound when ſcrophula had ravaged the whole ſet of ſuperficial lymphatic glands, and all the ſpongy bones which are remote from the heart. I think I have alſo obſerved two diſtinct ſpecies of diſeaſe in the lungs of conſumptive perſons; the one ſpreading through the whole ſubſtance of the lungs, the other confined to the lymphatic glands at their root. The former patients have more cough, pain, and ſhortneſs of breathing, ſo that the diſeaſe is ſoon underſtood, the latter have the diſeaſe proceeding inſi-

diouſly, with little pain, difficulty of breathing principally obſerved after exerciſe: the termination of this laſt ſpecies is alſo remarkable. It either carries the patient off by a violent and ſudden expectoration and hectick, or the matter is diſcharged, the ſore heals, and the diſeaſe ſeems, although unexpectedly, to have diſappeared. But perhaps I am telling what is told in every pamphlet on this ſubject, as I have no leiſure for ſuch reading, and more obſervations on this point may be on that account uſeleſs. Again—It has not occurred in my practice to ſee any good effects from medicinal applications to ſcrophulous ſores: keeping the parts in a warm and equable temperature, and exciting an increaſed action of the blood-veſſels in the ſkin of the adjoining parts, are the only methods which I have obſerved to produce any improvement in the ſores. Sometimes ſcrophulous inflammations are rendered leſs active by indu-

cing more powerful inflammations in their vicinity. This diſeaſe appears to my mind, in its origin, connected with a diminution of the animal heat, either of the whole body, or parts of it. There is a debility in the powers which circulate the blood; there is a defect in the reciprocal duties of the arterial and abſorbent ſyſtems; coagulated lymph is depoſited in weak parts, where it is neither perfectly organiſed by arteries and veins, nor modelled in its form and quantity by the abſorbents; in this ſtate it remains out of the reach of the actions of the living body, and undergoes the ſame ſort of change as coagulated lymph is known to do, when retained for a length of time in circumſcribed living cavities. This cheeſy ſubſtance, in proceſs of time, becomes ſtimulating, produces inflammation, ſecretion of the ſurrounding parts, its own ſolution, &c. Perhaps the attention of phyſicians may be more effectually employed in preventing this diſeaſe

among its probable victims, than in curing it. I underſtand, from a very informed and correct obſerver, that the true Dutch people hardly know ſcrophula in any form, but the other low country people, who imitate French dreſs, are very liable to all its appearances. The gilders in London are very ſubject to conſumption of the ſubſtance of the lungs, but no other ſcrophulous ſymptoms. They work in heated rooms, and are often induced to expoſe themſelves ſuddenly to cold and damp. I am told ſix out of ſeven die in their apprenticeſhip :"---

Upwards of a year before the date of Mr. Carliſle's letter, I had received a full account of the degree, in which the Dutch and Engliſh are comparatively ſubject to pulmonary affections, from Dr. Cogan, a phyſician, who from long practice in London and Rotterdam, has had ſuperior opportunities of obſervation, and whoſe ability to uſe them properly does not require

any voucher. Dr. Cogan's account will be ſeen very fully to corroborate the information obtained by Mr. Carliſle. It alſo contains circumſtances of the utmoſt importance to the whole inveſtigation. "I remember (ſays Dr. Cogan) to have mentioned, when I had the pleaſure of ſeeing you, that the Dutch, and even the Engliſh, who had reſided any conſiderable time in Holland, were forcibly ſtruck with the coughs, whether catarrhal or conſumptive, ſo univerſally prevalent in this country, in almoſt every ſeaſon of the year. At church and at the theatre, devotion and pleaſure are always interrupted, and ſometimes totally deſtroyed, by inceſſant coughs, expectorations, &c. while in the largeſt aſſemblies in Holland, inſtances of a ſimilar kind are ſcarcely known. This very ſtriking difference I have been induced to aſcribe to the contraſt obſervable between the two countries, in the conſtruction of their habitations, and in the peculiarities of dreſs.

The majority of the houſes in Holland, even at the preſent day, are the reverſe of what we ſhould deem *comfortable*. The rooms are large and lofty; the ſeparation betwixt the upper and lower apartments is made by painted boards merely, which, if they were not covered with mats or carpets, would tranſmit the light as well as air. The generality of the Dutch are not accuſtomed to the luxury of a *cieling*; nor is the tile-work of the garret roof ſecured by common lath and plaiſter. Thoſe who are not ſophiſticated by modern manners ſeldom indulge themſelves by the ſide of a large fire. Many of their rooms have no chimnies, and in many that have, generations have paſſed without a fire having been once kindled in them. Their fires are, both from œconomy and choice, made as ſmall as poſſible. Five or ſix turfs, about the ſhape and ſize of our bricks, which is the uſual fuel of the country, are arranged in the form of a chimney, and a

glowing coal placed at the top, by which method the inward ſurfaces are enkindled, and the turfs are half conſumed before any ſhare of a very moderate heat is received in the apartment. The females never approach the fire, but generally place themſelves at the greateſt diſtance, contented with a ſmall coal of the turf, completely charred in an earthen pot filled with aſhes to moderate the heat. This is placed in a wooden box with a perforated ſurface, and applied to the feet. Supported by this conſolation, they prefer placing themſelves at the greateſt diſtance from the fire, generally by the windows, which (by the way) from their immenſe ſize, greatly contribute to the coolneſs of the rooms. A Dutch woman feels herſelf inſufferably oppreſſed in an apartment we ſhould deem moderately warm, nor can ſhe withſtand a large coal fire in a cloſe apartment for the ſpace of five minutes. There are many diſadvantages, however, attending the perpetual

uſe of theſe *ſtoves*, as they are called, among which the moſt obvious and habitual, is the extreme coldneſs of the feet: an evil, which as they are not fond of exerciſe, can only be remedied by application to their beloved ſtoves.

In villages and ſmaller towns, that are leſs modernized, the houſes are, to a ſtranger, inſufferably cold and comfortleſs. As the common or family room, is very liable to ſmoke from the bad conſtruction of the chimney, the door is either left entirely open, or kept a-jarr by means of a plank faſtened at the ſide, ſo that air may be admitted from the top of the door. From this room, light is frequently received into the cellar, or ſome adjacent room, through open rails of iron-work, or carved wood. To theſe comfortleſs circumſtances, as we ſhould deem them, may be added, a ſpirit of cleanlineſs, which indicates itſelf in perpetual white-waſhings and ablutions, which are divided into

annual, quarterly, monthly, and weekly, according as they are of greater or leſs extent, and their habitual uſe of damp and unaired bed linen.

To counteract the diſcomfiture and chill naturally ariſing from theſe ſources, the Dutch envelope themſelves in cloathing, of which a ſtranger can entertain no conception. Moſt of them wear two ſhirts, and a flannel waiſtcoat with ſleeves, which they call a *corſtrok*, between them. The corſtrok, calecons, or drawer, with woollen ſtockings, are the conſtant companions of both ſexes, night and day; to theſe are ſuperadded a *gezontheid*, or ſmall waiſtcoat without ſleeves; it has its name from its being ſuppoſed conducive to health. Some ſurround their bodies with wrappers of thin woollen cloth, ſeveral yards long; to theſe ſucceed the coat and waiſtcoat, as with us, the latter always with ſleeves; and when they go into the cold air, they add either a pelliſſe, or a *ſchautzlooper*, which is made

of thick cloth, lined with woollen. Their females are proportionably warmly clad, and as to their infants, they are abſolutely made about the ſhape and ſize of a moderate bolſter, before they dreſs them in garments that are to meet the eye. This mode of dreſs is certainly unfavourable to cleanlineſs, with all the ſalutary conſequences attending that virtue, and they are too much deprived of the invigorating ſtimulus of atmoſpheric air applied to the body; but they are defended againſt the claſs of diſorders proceeding from the cold and dampneſs of their houſes, or from the ſudden tranſitions ariſing from a cold atmoſphere and warm apartments. In ſhort, by the extreme airineſs of their rooms, and warmth of their dreſs, they are ſecured againſt thoſe extremes of heat and cold, to which the inhabitants of theſe countries are hourly expoſed during the winter ſeaſon. Their cuſtoms are a direct contraſt to our own, it being cuſtomary among us

to dreſs as ſlightly as poſſible, and render our apartments as warm as poſſible, by the united aid of large coal fires, double doors, warm carpets, cieled rooms, and by every caution that can prevent the external air from entering at chinks and crevices, to reſtore the balance of circulation.

This contrariety in the mode of living, in thoſe two eſſential articles of dreſs and habitation, will fully explain, my dear ſir, the cauſe of the frequency of catarrhs in this country, and their being comparatively ſeldom in Holland, without imputing the cauſe excluſively or principally, as ſome have done, to the great variableneſs of our climate. The tranſitions from heat to cold in Holland, are fully as frequent as in England, and the extremes of heat and cold are generally greater; but their effects upon the conſtitution are by no means ſo immediate or violent. Thus I fear that the opprobrium that has been caſt upon the climate of England, rather belongs to the injudicious conduct of its inhabitants.

It has been remarked, that as luxury increaſes in Holland reſpecting the greater comforts and accommodations of their apartments, they are becoming more ſubject to catarrhs. Certain I am, that the Engliſh inhabitants of Rotterdam who imitated the manners of this country reſpecting the largeneſs of their coal fires, warmth of apartments, and thin cloathing, have been much more expoſed to what we term *catching cold*, than the Dutch that retain their priſtine manners. A remarkable circumſtance in Mrs. Cogan's family will confirm the ſame idea. Of two brothers, the one was ſo partial to the Engliſh, that he adopted all their manners, and ſometimes to an exceſs in the article of dreſs, diſdaining to wear an under waiſtcoat, and braving the inclemency of the weather with an open breaſt, &c. The other ſtrictly adhered to the cuſtoms of his country, for which he was frequently bantered by his brother. But the banterer

died of a conſumption when he was about thirty years of age, while the other, whoſe delight was in hunting and fiſhing in the moſt inclement ſeaſons, was a perfect ſtranger to coughs and colds, and enjoyed uninterrupted health till he had paſſed his 57th year, when he was killed by accident.

I might alſo remark, that the Germans are ſaid to be as liable to catarrhs, and conſequent conſumptions, as ourſelves: and a journey I took to the northern parts of Germany in the winter of the year 1784, which was very ſevere, not only convinced me of the fact, but in my opinion pointed out the cauſe. The ſuffocating warmth of their ovens or ſtoves, to which the Germans are ſo much attached, produce too powerful a contraſt with the external atmoſphere, to be reſpired with impunity. But as you have been in Germany, it is highly probable that your obſervations have been more minute and accurate than my own.

Theſe facts ſeem perfectly correſpondent with the modern ideas concerning the nature and cauſes of catarrh, together with the powerful ſtimulus of heat, after the application of cold; but it would be impertinent in me to theorize upon the ſubject, which is in much better hands. I ſhall deem myſelf happy if the above hints ſhould prove in the leaſt degree ſerviceable to your purpoſe; and ſincerely wiſh you ſucceſs in your indefatigable endeavours to promote ſalutary truths."

SCOTLAND.

Concerning this diviſion of Great-Britain, we poſſeſs, in the *Statistical Reports* publiſhed by Sir John Sinclair, a document more precious than can, I believe, be produced concerning any other country. It

is a minute interior ſurvey, almoſt from houſe to houſe, and in point of inſtructiveneſs, ranks far above the productions of the moſt inquiſitive and authentic travellers. Not a few of the papers, indeed, betray prejudice, ignorance, and want of diſcrimination; in ſome, contradictions are eaſily diſcoverable. But there is upon the whole ſo much particularity, in ſeveral inſtances ſo much intelligence, and each account is ſo completely checked by the reſt, that the cauſes of the condition of the people are perfectly apparent. The facts are, I imagine, applicable likewiſe to England. There is at leaſt, no reaſon to ſuppoſe that the mere difference of latitude makes any ſenſible difference with regard to the prevalence of the diſorder which is the ſubject of the preſent eſſay.

It reſults from a compariſon of the different parochial reports, that rheumatiſm and conſumption, with low fever, are the prevailing diſorders of Scotland. How, and

to what degree, low fever takes place in conſequence of penury and heedleſs expoſure to contagion, it is foreign to my purpoſe to inveſtigate. But rheumatiſm and conſumption ſtand in a ſort of contraſt to each other. A multitude of teſtimonies (and in the whole twenty volumes there is no oppoſing evidence) may be brought to prove that, in general, *women, eſpecially thoſe who follow ſtill employments, and men engaged in the almost feminine occupations of the cloathing manufacture, become frequently conſumptive: whereas the husbandman and the ſhepherd, being obliged to expoſe themſelves inceſſantly to the viciſſitudes of the climate, and untaught to employ any precautions against the effect of theſe viciſſitudes, either become crippled by the rheumatiſm, or wear out a wretched existence under the constantly returning pains of this ſevere diſeaſe.* In a medical map of Scotland, unleſs the ſcale were very large, ſpace could with difficulty be found, if the word *rheumatiſm* were to be repeated as

often as it occurs in the Statiſtical reports. It would be worthy of the claſs whoſe food is raiſed at ſo dreadful an expence to their inferiors, to adopt means for inſtructing the peaſantry (ſince they muſt continue to be expoſed) how they may eſcape the conſequences of expoſure. The inſtruction might probably be communicated through the clergy.

A remarkable circumſtance has contributed to the modern frequency of rheumatiſm; and in habits of an oppoſite kind, the ſame circumſtance muſt often have produced conſumption. Within the memory of perſons now living, the activity of commercial ſpeculation puſhed the goods manufactured at Mancheſter into the fartheſt receſſes of Scotland; and the people, allured by their gaiety of colour and fineneſs of texture, unwarily relinquiſhed the warm woollen garb of their forefathers. The reporters every where ſpeak of a change for the worſe in the general ſtate of health,

as taking place, under their own eye, in conſequence of this change of dreſs.

Among the numerous repetitions of the ſame facts, I find it difficult to chooſe. To the following illuſtrations I could have added many of the ſame tendency, and of equal force. The inverted commas will ſhew where I copy the words of the report. For the reſt, I have retained the conciſe language of my abſtract, which I have not been anxious to ſtrip of every particular that may ſeem not immediately connected with the ſubject.

Pariſh of KILBRIDE, *(County of Lanark)* population 2359. Employments, weaving, manufacture of cotton, ſhoemaking.—"The diſeaſe that carries off the greateſt number of perſons, about the middle period of life, is the conſumption. Old people affirm, that in their forefathers' days this diſeaſe was extremely rare, and *ſeldom mortal!*" Its progreſs is aſcribed to change of cloathing, from the thick, warm Scot-

tiſh plaiding, to fine, thin, cold Engliſh cloth. Vol. III. p. 427.

CAMPSIE, (C. of *Stirling*), population 2527 : numbers employed in callico-printing, and weaving; weavers 105; pencillers of callico (who are young perſons and married women) 160, beſides block-printers. Deaths for the laſt 3 years---

Of ſmall-pox, - -	15
Palſy, - - -	2
Aſthma, - - -	1
Chincough, - -	6
Meaſles, - - -	6
Child-bed, - -	1
Mortification, -	1
Bowelhive, - -	1
Old age, - -	26
Conſumption, -	26

Sixty years ago, conſumption unknown in this diſtrict. " Where people were cloathed in pladding which ſomewhat reſembles flannel (which was the caſe till very lately in this diſtrict), and where

they ſeldom were confined to work in warm houſes (as is now the caſe), great colds, the forerunners of conſumption, would not eaſily affect them." XV. 360.

Climate variable; coal plentiful, "which enabling the meaneſt cottager to obtain a hearty fire, may contribute to ſalubrity." 319.

KIRKCONNEL, *(Dumfries)*. "Not unnatural to ſuppoſe, that to the *modern* paſſion for light, flimſy, airy dreſs, ſo prevalent among all ranks, ſo unſuitable to the conſtitutions of all, and to the occupations and funds of moſt, particularly the poorer ſort—no ſmall ſhare of the equally common prevalence of colds, fevers, rheumatiſms, aſthmas, conſumptions, is owing."

KIRKCALDY, *(Fifeſhire)*. The moſt prevalent diſeaſe is rheumatiſm, chiefly affecting the aged, "and even theſe chiefly among the claſſes which are expoſed to hard labour in the open air." Conſumption prevails among young females. LIFF

and BERVIE, *Forfar*; much weaving. "Conſumption and rheumatiſm (diſorders the moſt fatal to ſociety, eſpecially in the country, owing principally to the want of good and comfortable accommodation among the poorer claſs of people) are not more prevalent in this than other quarters where the ſame proportion of people lead ſedentary lives." XIII. 103. It ſhould be obſerved, that expoſure to the weather, with ſubſequent miſmanagement, is not the ſole cauſe of the rheumatiſm. In the reports, cold damp houſes are very often obſerved to produce it. RATHEN, *Aberdeenſhire*, 1730 ſouls. The well-diſpoſed live comfortably. Servants and others now ſpend ſo much in dreſs, that they are in general poor.

Low fevers lately fatal. Formerly inflammatory fevers prevailed more. "Not 50 years ago, the rheumatiſm was little known. Now there are few grown perſons altogether free from it."

The extract from the regiſter of the diſpenſary at Aberdeen, unfortunately ſupplies no information concerning conſumption. But it ſeems to ſhew that either from leſs expoſure, or from the houſes being drier than in ſeveral of the country pariſhes, the inhabitants of the town are not ſo extremely ſubject to rheumatiſm as the peaſants. The population of Aberdeen is ſaid to conſiſt of 24,493 ſouls—

In 1786, there were admitted	ill of fever -	290
	of rheumatiſm	27
In 1787, - - -	fever - -	382
	rheumatiſm -	26
In 1788, - - -	fever - -	348
	rheumatiſm -	15
In 1789, - - -	fever - -	235
	rheumatiſm -	16
In 1790, - - -	fever - -	623
	rheumatiſm	33
In 1791, - - -	fever - -	350
	rheumatiſm	4

In 1792, - - -	fever - -	200
	rheumatiſm	38
In 1793, - - -	fever - -	228
	rheumatiſm	25
In 1794, - - -	fever - -	86
	rheumatiſm -	57

In the hilly and damp pariſh of CARSEFAIRN, *Kircudbrighſhire*, "the rheumatiſm, it might be expected, would be a prevailing diſeaſe; particularly when it is conſidered that the ſhepherds, after being greatly overheated in climbing the ſteep mountains, muſt often be expoſed to the piercing air on their ſummits, and that they often continue wet for whole days and nights. *That it is not ſo*, muſt be attributed in a good meaſure to the diſcreet uſe of warm woollen cloths, particularly the *plaid*, with which every inhabitant of the pariſh - - - is provided." vii. 514.

Theſe paſſages repreſent what is ſo perpetually told of the effect of dreſs upon the health of the peaſantry. They alſo

illuſtrate the contraſt which I have ſtated to prevail between conſumption and rheumatiſm. But the curious and able account of the pariſh of LONGFORGAN in the *Carſe of Gowrie, Perthſhire*, ſhews, in a manner peculiarly diſtinct, how rheumatiſm and pulmonary complaints are ſhared among the inhabitants, according to conſtitution, diet, and occupation. Longforgan has a population of 1526 ſouls. The leſſer farmers and manufacturers (among whom are 61 weavers) have plenty of good, wholeſome food. Many are ſupplied with butcher's meat at times; and both they and the labourers not only uſe oatmeal and potatoes with the produce of their yards and gardens, but they frequently have wheaten bread. Almoſt all who have families, uſe tea and its accompaniments.

In this pariſh there are thirty-ſix ſmall farmers, from 5l. to 15l. rent; but almoſt every one has a trade, ſo that the management of his little farm is the employment

of his leiſure hours only, which improves his health, and gives him many little comforts. There are alſo tradeſmen (mechanics) who have only a yard or garden.

Formerly agues prevailed in the *low Carſe*, but ſince its draining they have diſappeared. Fevers not frequent. "Ploughmen and labourers are ſubject, while young, to colds: theſe, in ſtrong conſtitutions and at a more advanced age, generally terminate in rheumatiſm and *gouty pains*, as they are called by the country people. In others, theſe colds fall upon the breaſt; the lungs are affected, and in general ſuch complaints terminate fatally. This termination generally happens in ſcrophulous habits, which are very prevalent among the weavers and common people."

ELGIN, *Murrayſhire*, ſouls 4534. "We are become more effeminate, and labour (is become) more ſevere, while the mind is depreſſed from the anxieties of life, and the difficulty of procuring a ſubſiſtence.

The progreſs of the ſcrophula is alarming. ----Conſumptions are frequent among the young. Manufacturers and tradeſmen, in particular, are ſubject to them from the nature of their employment. The women lead ſedentary lives, from which ariſe obſtructions that often terminate fatally; and from the ſame cauſe, difficult labours are more common than formerly." v. 17. In the ſame page, the frequency of ſcrophula and conſumption is a ſecond time mentioned. P. 22. It is conjectured that late marriages, from diſcouragement, give riſe to "a puny, helpleſs race of children."

CLUNY, *Aberdeenſhire*. All the women, ſome old men, and boys, knit ſtockings all the year round (except in harveſt) for the Aberdeen manufacturers. Formerly all the country people dreſſed in cloth of their own work;---now every ſervant lad almoſt muſt have a ſunday's coat of Engliſh broadcloth. Formerly every ſervant lad and maid had a ſteer or two, and a ſcore of

ſheep;---now both ſexes have only finery to begin the world with. X. 245. Rheumatiſm, low-fever, conſumption, and ſcrophula, are the prevailing diſeaſes. Of theſe, conſumption the moſt fatal. 237.

RAYNE, *Aberdeenſhire*. Stockings knit by all the women, ſome old men, and boys. Hyſterics very common, and cutaneous diſorders. Yearly deaths 17, in a population of 1173; of the 17, 7 or 8 are from conſumption; living wretched. Similar facts occur in many Aberdeenſhire pariſhes.

LONDOUN, *Ayrſhire*. The diſeaſe that is moſt prevalent is the conſumption. Scrophula, or white ſwelling, is frequent from poor living and ſedentary life, and bad air in weavers' ſhops, where they never have a fire." BEITH, *Ayr* and *Renfrew*—of 2872 perſons, 259 are employed in making thread, and weaving muſlin, beſides many females who ſew and tambour muſlin. A good deal of ſickneſs in the village. Fevers and conſumptions the prevailing diſorders.

As a contraſt to theſe inſtances, of which hundreds more could be produced, the village of CATRINE, in the pariſh of SORN, *Ayrſhire*, deſerves to be noticed. It is inhabited by cotton-manufacturers, to the number of 1350, and in conſequence of the following regulation, is ſaid to be very healthy, though a few die of conſumption and fevers. XX. 143. The proprietor, Mr. Alexander, directs the overſeer of his farm to ſet off annually, from 15 to 25 acres, according to the quantity of dung ſaved by the villagers. On this land are planted potatoes, ſufficient for the winter proviſion of the manufacturers. "The dreſſing of theſe potatoes is the employment of both old and young on the ſummer evenings, after they are diſmiſſed from the mills---their emulation to have the beſt and cleaneſt crop, renders them all very induſtrious. It is an extremely pleaſant ſight, on a fine ſummer's evening, to ſee ſuch a number of

people ſo uſefully employed." 177. Children under nine are not admitted into the work.

From ſeveral reports it appears, that when poor living and cold combine with ſedentary occupations, conſumption is particularly common. Thus at DUNDEE, *Forfar*, where the population is ſtated at 23,000 ſouls, "the moſt frequent endemical diſeaſes are conſumptions and the ſcrophula, by which laſt, perhaps, the former are principally produced. The ſcrophula ſeems principally to affect the families of linen-weavers, who ſometimes feed poorly, and whoſe manufacture is carried on in damp and low floors." viii, 200.

The effect of cold and penury in the production of ſcrophula, is remarked in a multitude of articles. Rheumatiſm is generally mentioned at the ſame time, in a way which leads to ſuppoſe that it attacks thoſe whom better fare, or a hardy conſti-

tution, exempt from ſcrophula. Thus in the elevated pariſh of CURRIE, *Mid Lothian*, where the walls of every houſe "diſplay marks of the moiſture of the climate," rheumatiſm is ſtated to be the chief diſorder; and ſcrophula to be "very prevalent, as in all the pariſhes where the climate is cold and damp, and the living of the inhabitants poor, and principally of the vegetable kind. The miſery this diſorder occaſions, would in many places of Scotland ſeem to require the interference of the legiſlature to prevent, if poſſible, its increaſe." v. 314, 315. Under the head WIGTOUN and ROBERTOUN, *Lanarkſhire*, we are informed that "a good many people die of a kind of conſumption, conjoined with, and terminating in, rheumatic pains and ſwellings, induced by living meanly in cold, damp, uncomfortable cottages." vi. 309. Whether the ſwelling of the legs, which is general in conſumption, and the ſevere wandering

pains that are often felt, are here miſtaken for rheumatic, is very immaterial.

In ſome few ſituations, it would appear that mechanics who labour in cloſe apartments, ſuffer leſs than the peaſantry. Theſe inſtances make nothing againſt the general propoſition laid down above; and I point them out here, leſt it ſhould be ſuppoſed that I had not taken them into conſideration. It is in fact eaſy to conceive that the huſbandman may be occaſionally expoſed to powers more deleterious than thoſe which regularly operate upon the manufacturer. In KILMADOCK, or DONNE, *Perthſhire*, this exception would appear to take place. Kilmadock contains 3209 inhabitants, of whom 700 are employed in the only cotton-work of the pariſh. Concerning theſe, it is ſaid that "the confinement of ſo many people in one houſe, rendered the air very impure; the heat neceſſary in preparing the cotton kept the workmen conſtantly in a ſweat,

and extracted the nouriſhing juices. The noiſe of the machinery rendered them ſoon deaf; and the flying particles of cotton, and conſtant labour of the eye in watching the texture of the thread, weakened and deſtroyed the ſight." Theſe evils are "in a meaſure remedied." xx. 87, 88.

In this pariſh, ſmall-pox, fevers, and conſumptions, are the fatal diſeaſes. "Fevers and conſumptions are the conſequence of hard labour, bad food, and colds. *They are therefore moſt prevalent among the country people.* The food of many of the people is extremely poor. No attention is paid to the advantages of a kitchen garden. The houſes too are, in ſeveral places, wretched huts, ſcarcely capable of ſupporting the roof, and far leſs of defending againſt the ſtorms and colds of winter. - - - - - - The inſufficient cloathing adds to the general train of cauſes." ib. 52. The pariſh wants coal. p. 92.

Of the pariſh of ERROL, *Perthſhire*,

where the whole country is naturally wet, though much drained of late, and the houſes are ſaid not to be ſo well-built as of old, it is obſerved, that the ague is not ſo prevalent as formerly. But "a diſeaſe ſtill more fatal ſeems to have come in its ſtead. Conſumptions, which formerly were rare, have of late been very frequent, although from the ſtate of cultivation, it ſhould be thought that the air is much more ſalubrious. But (what is remarkable in the Carſe of Gowrie) the people who reſide in the higher parts are not found to be the moſt healthy. The inhabitants of the low and marſhy grounds, indeed, may be more liable to rheumatic complaints, but they have often been obſerved to enjoy the longeſt courſe of life." iv. 481.

I ſhall content myſelf with theſe quotations. They are undoubtedly not ſufficient to prove any thing concerning Scotland at large: but they are perhaps more than ſufficient for the purpoſe for which they

are produced. They make the concluſions, in which I conceive the maſs of reports to agree, fully intelligible.

GENERAL INFERENCE.

On a review of the whole of the preceding facts, two different concluſions offer themſelves to our conſideration. *Certain claſſes are leſs liable than others to conſumption, either becauſe the exhalations to which they are expoſed preſerve the lungs in a healthy ſtate, or becauſe they acquire from their mode of life a habit leſs ſuſceptible of the complaint.*

It would be raſh to aſſert that no ſort of exhalations have a preſervative power. The caſe of the manufacturers of catgut, though it requires further examination, ſtands in ſtrong oppoſition to ſuch an inference. It would be no forced conſtruction of the evidence reſpecting butchers,

and perhaps of that reſpecting fiſh-women, to impute the degree of ſecurity which they enjoy to the ſame cauſe. It may be ſuppoſed that ſeamen are rendered leſs ſuſceptible by the odour of tar. But this ſuppoſition, even though no other facts remained to be accounted for, would, I apprehend, afford little ſatisfaction to thoſe who conſider the circumſtances with attention. The total difference between the nature and abundance of the fumes to which catgut-makers, butchers, and perhaps fiſhwives, though in very different degrees, are expoſed on the one hand, and ſailors on the other, takes away greatly from the probability of the opinion. Though the copious, groſs, and palpable exhalations of putrefying animal ſubſtances ſhould have a ſpecific power of preventing pulmonary ulceration, we cannot for this reaſon preſume any thing in favour of the mere ſmell of tar. Two diſtinct materials applied to the lungs, are not more likely

to produce a common effect than two diſtinct materials applied to the ſtomach. Nor does experience of animal nature offer analogies which can juſtify us in believing that a minute portion of odoriferous matter, however it may ſtimulate the olfactory nerves, ſhould be capable of acting with effect on an organ ſo inirritable as the lungs. And when we attend to the remainder of the claſs that appears leſs liable to conſumption, the hypotheſis fails us altogether.

Waving the example of the manufacturers of catgut, the others are eaſily underſtood: the butcher, the fiſhwife, the ſailor, the keelman, the huſbandman, and the ſhepherd, have ſomewhat of a common conſtitutional character. They compoſe the moſt robuſt part of the community. And if we abſtract from external violence, and internal mechanical injury, whom do we find prediſpoſed to conſumption? whom but the puny by deſcent, by diet,

by ſex, by occcupation? In this point the facts on both ſides meet; on any other principle they are irreconcileable.

But my doctrine is perhaps leſs in danger of oppoſition than of contempt. It may be regarded as too general for any purpoſe of uſeful application, and too obvious to require a formal induction of proofs. I am however to learn that any one has traced exemption from phthiſis and phthiſical ſuſceptibility through the different orders of ſociety. Much leſs has a body of information, thus acquired, been employed for aſcertaining the power of climate; for the analyſis of oppoſite conſtitutions; for explaining the operation of the determining cauſes; for clearing up the connection between catarrh and conſumption; for the ſolution of other difficulties; for deducing rules of conduct, ſuited to various ſituations; for the correction of errors that lead phyſicians to give, and the people to follow, uſeleſs ad-

vice; and for removing thoſe miſconceptions, of which impoſtors avail themſelves to induce the public to have recourſe to their wretched ſyrups and balſams.

PARTICULAR CONSIDERATIONS.

To eſtimate the preciſe power of every circumſtance, which, by rendering the habit robuſt, contributes to ſecurity againſt conſumption is, in the preſent ſtate of phyſiological ſcience, impoſſible. Much doubtleſs depends on their co-operation. But for the regulation of conduct, it will be uſeful to diſtinguiſh them from one another, and to ſhew that each has a real effect. I may be the more conciſe, as the moſt luminous of all poſſible commentaries will be found in the facts related above.

Of the following obſervations, it is to be underſtood that they can only with propriety be adopted in practice, where there is feebleneſs of conſtitution, without formed diſeaſe. For caſes of hereditary prediſpoſition, joined to feebleneſs of conſtitution, I do not perceive that any peculiar ſyſtem of rules is neceſſary. None need be taught that double danger demands double care.

Diet.—To the quantity of animal food conſumed by the Engliſh, ſome authors have attributed our propenſity to ſuicide, and others our liability to conſumption. But there are few countries in Europe, of which the inhabitants do not conſume as much animal food as the correſponding claſſes of the Engliſh; and in ſeveral countries, animal food forms a much more conſiderable proportion of the uſual diet than in England. Theſe countries do not enjoy a climate particularly favourable, yet we by no means find that the lungs of

the inhabitants pay the penalty of their greater voracity. They are not more phthifical in proportion as they are more carnivorous.

How much the natives of Vienna exceed thoſe of London in the frequency and fullneſs of their meals, appears from the minute relation of Mr. Nicolai of Berlin, in his excellent travels through Germany. *(Reiſe durch D. utchland)*. The lively and obſervant, but perhaps leſs inſtructive, Baron Riſsbeck, in his aſſumed character of a French traveller, tells us, that in the capital of the Auſtrian dominions, people feed much more plentifully and delicately than at Paris. " The daily table of people of middle ſtation, of the inferior ſervants of the court, of merchants, artiſts, and the ſuperior mechanics, conſiſts of ſix, eight, or ten diſhes, to which two, three, or four ſorts of wine are added. They commonly ſit two hours at table, and I was reckoned uncivil for declining ſeveral

diſhes in order to ſpare myſelf indigeſtion." (*Briefe uber Deutſchland. Wien* 1790, f. 31). I believe the ſuperiority of Vienna, in the article of gluttony, is perfectly well underſtood by every one who has taken the ſmalleſt pains to inform himſelf of the manners of different countries. The ſame habit extends far beyond the precincts of the capital. "I cannot (ſays a medical obſerver) by any means perſuade myſelf that the exceſs of the Engliſh in animal food (with which we Germans, at leaſt, very unfairly reproach them) has any thing to do with the frequency of ſelf-murder in their otherwiſe fortunate iſland. For in Bavaria, Auſtria, and other provinces of the German empire, far more butcher's meat is ſerved up than in England, and far more eaten: yet with us ſuicide is a far more unfrequent occurrence. That we, in fact, eat a greater variety and a greater quantity of meat than the Engliſh, I was convinced by the entertainments at which

I was preſent in London. And I ſtill recollect with pleaſure, an incident to this purpoſe that took place at Coventry. At an inn in that city, my fellow-travellers and myſelf beſpoke all the articles (they were about ſix) in the bill of fare. We were obliged to repeat our order to the waiter three ſeveral times, and at laſt were interrogated by the landlady herſelf, whether we had in earneſt ordered *all* that meat. So ſimple is Engliſh fare." (*Salzburg med. chirurg. Zeitung* 1790. I. 170). Theſe atteſtations ſeem entitled to the greater attention in an enquiry like the preſent, becauſe the Engliſh temperament, if I miſtake not, more nearly reſembles the German than that of the inhabitants of warmer countries. Yet even, in ſome of theſe, more animal food is perhaps conſumed than among us. I can hardly perſuade myſelf, for example, that the French cookery, which renders meat more palateable and more digeſtible, does not occaſion a greater

quantity to be taken; and according to the beſt of my obſervation, a greater quantity both at Paris and in the provinces was taken. A diverſified table is a temptation that rarely fails of its effect. In oppoſition to a well-known paper in the ſpectator, the naturaliſt Buffon, as his friends aſſured me, uſed to aſſert that a French meal, from a variety of diſhes, is more wholeſome than the ſimple and ſlender fare of an Engliſhman. Addiſon is, I believe, greatly miſtaken in imputing the conſequences he does to mere eating. The unwholſomeneſs of mere variety of food is among the groſſeſt of popular errors.

The obſervations, related above, nearly all concur in making it appear, that the perſons moſt free from conſumption are preciſely thoſe that conſume moſt animal food. Their healthfulneſs is undoubtedly not to be imputed to this circumſtance alone: but it is to be preſumed that their ſubſtantial diet has its ſhare in determining their perſonal condition.

We may adopt this conclusion with the greater confidence, because it is powerfully supported by analogy. We observe that a large proportion of the consumptive, either in the earlier part of life, or at the very time when the chest suffers, are affected with scrophula or king's evil, a disorder which shews itself by slow, indolent swellings of the glands, by pale ulcers with thick turned up edges, and by other well-known signs: so that the appearance of scrophula is justly regarded as a sign of the consumptive habit. When children are fed upon vegetables, with little or no admixture of animal food, they die in great numbers, of scrophulous affections. In the families of the poor who *cannot* command better aliment, this is one principal cause of mortality; and in the families of the rich, who in consequence of erroneous medical notions sometimes *will not* allow a proper proportion of animal food, scrophula often takes place, (though in a

ſlighter degree, for it is checked by other circumſtances) and the foundation of conſumption is laid. "There are (as a writer of ſuperior merit on the king's evil obſerves) among the higher claſſes, ſome who keep their children to the fifth, or even the ſeventh year, upon a ſtrict vegetable and milk diet, believing that they thus render the conſtitution a ſignal ſervice. I have however, frequently pointed out to parents, whom I have heard boaſting of the advantages of this management, either an enlarged abdomen, or ſome other ſign of incipient ſcrophulous indiſpoſition, which has convinced them that their children were far from being ſo healthy as they ſuppoſed. In our temperate latitudes, a diet of this kind is certainly not proper after the age of two years. Where a feeble conſtitution coincides with an hereditary diſpoſition to ſcrophula or rickets, tender meat and ſoups are particularly ſerviceable. Dr. Weikard perfectly agrees with me in

opinion. He obſerves that children brought up according to the faſhion of the great (without animal food), are particularly liable to the rickets. Dr. Kaempf atteſts, that by animal diet he has reſtored a great variety of children who had been dreadfully reduced by water-gruel, milk, and vegetables. Dr. Vogel alſo aſſerts, that animal food is falſely held to be a cauſe of atrophy, and that children, from whom ſuch food is withheld, oftener fall into an atrophy than thoſe to whom it is allowed." (*C. G. T. Kortum de vitio ſcrophuloſo.* I. 3. 50). Theſe teſtimonies may be received with the fuller aſſurance, becauſe in other reſpects the authors are ſtrongly diſpoſed in favour of that theory, which ſtill not unfrequently deludes Engliſh parents with the falſe hope of rendering the blood of their children pure, and their humours mild, by millet pudding, and by other preparations of vegetable ſubſtances in over-proportion.

That a diet in a great meaſure vegetable ſhould be the moſt wholeſome (or not unwholeſome) in tropical regions, where ſcrophula and conſumption are little known, and that it ſhould agree well with a few individuals in this country, can be of no importance to the preſent inveſtigation.

In caſes, therefore, where habitual weakneſs or the hiſtory of the family gives reaſon to apprehend conſumption, one of the moſt indiſpenſable rules of preſervation is to *uſe animal food freely*. There ſeems no limit to the quantity, but the indications furniſhed by the palate, and the power of the digeſtive organs. More ſhould not be given—more will not be long taken—than is fully reliſhed. A few ſurfeits will not be followed by the leaſt injury. The ready ſickneſs of children is the natural cure of their indigeſtions, and has the appearance of a proviſion againſt the voracity and inexperience of that age. Feeling,

assisted by observation, will soon fix the just measure of aliment. In addition to a nutritious dinner, children after their fourth or fifth year, should be allowed a moderate quantity of solid animal food, or of good soup, once a day. Abstinence from vegetables I by no means recommend; and (to repeat an essential caution) what has now been said is to be understood of the ordinary state of health. In sickness, the diet must be varied according to the exigency of the case.

Exercise.—Were it in my power to recommend a *passive* plan for rendering the system of young people robust, I should doubtless give many of my readers much greater satisfaction. — The prospect of being long obliged to make observations, and to exercise discretion, will create a sense of repugnance in the very individuals, who would think nothing of forcing upon their little ones a nauseous diet-drink for months or for years together. So much more

irkſome is it in general to think than implicitly to follow directions! Rather than ſubmit to a careful regimen, we every day ſee people ſubmit to the periodical return of ſevere diſorders. And ſelf-denial is, I apprehend, far leſs contrary to modern habits than continued exertion. We ſeem to have loſt all reliſh for active occupations in proportion as they are become more neceſſary to us. In the caſe, however, of a conſtitutional tendency to conſumption, it is juſt as reaſonable to expect ſecurity from an amulet worn round the neck, as from mere medicines received into the ſtomach.

It does not require nice obſervation to be ſatisfied that *exerciſe is neceſſary to give effect to diet*. Between the oppoſite examples, adduced in the former part of this eſſay, the moſt ſtriking difference, perhaps, conſiſts in the activity or inactivity of the parties: thoſe leſs liable to conſumption being obviouſly the more active, and thoſe

more liable, the leſs active. This is ſtrongly illuſtrated by the hiſtory of the health of the ſexes.

We find alſo that ſcrophula rarely affects the active and well-fed. Women have long been obſerved to be more ſubject to ſcrophula, for which Dolaeus ſuperſtitiouſly accounts by ſuppoſing that providence deforms the neck of females with morbid excreſcences, to puniſh their vanity in diſplaying this part encircled with coſtly ornaments. Dr. Kortum well obſerves, that this doctrine requires conſiderable reſtriction, ſince in childhood both ſexes are treated pretty much alike. Boys and girls keep company; they run together, they jump together, and dig together. It is not till after that unfortunate æra, when the girl is taken up to be manufactured into a lady, that every thing conſpires to prevent her organization, originally perhaps more feeble, from acquiring a healthy force of action. I have been ſometimes

tempted to think, that a period nearly equal to that of female education is required before the conſtitution can be undermined, and the lungs thrown into a ſtate of complete diſeaſe; and that this is one reaſon why conſumption is ſo common about the age of puberty.

To a people which ſhould carry into practice the maxim ſo vainly profeſſed by us---*that health is the firſt of bleſſings*---a faithful delineation of the life, led by women in opulent families, would appear not leſs paradoxical than the obſervances of the moſt uncultivated tribes appear to us. It is one continued ſcene of indolence, diverſified only by the ſucceſſion of ſedentary amuſements to ſedentary occupations.

Home education is perhaps, in reſpect to exerciſe, rather leſs prejudicial. Somewhat more of exerciſe will be allowed; and there is certainly leſs danger of injury from ſcanty or meagre food. As to boarding ſchools, it is impoſſible to be aware of

the ſources of human ſuffering, and to behold without commiſeration, the proceſſions they ſend forth. The movements of the poor priſoners, that make up theſe proceſſions, are utterly unworthy of the name of *exerciſe*. They cannot be ſuppoſed to contribute in any degree to health: and as they want nothing to funereal melancholy but ſables and the hearſe, they probably render the actions both of body and mind, more languid.

Of ſedentary employments, all kinds are not equally unfavourable to health. Thoſe which moſt exerciſe the ſenſibility are doubtleſs the moſt hurtful. Hence the frequent peruſal of melting love-ſtories related in novels, has been juſtly reprobated. The prevailing paſſion for muſic has probably occaſioned more extenſive miſchief. This is not a ſimple evil. The excellence to which emulation, and ſometimes the heedleſs vanity of parents, incite young women to aſpire in this art, impoſes

the neceſſity of intenſe ſtudy; and the pleaſure of muſic, like all other paſſive pleaſures, is highly enervating. I do not, however, found my opinion ſolely upon this principle, well-eſtabliſhed as it is. I have met with a number of phthiſical females who aſcribed the origin of their complaint, in part, to the cloſeneſs of their application to muſic.

Boys, though not ſo ſtrictly immured, are not in general ſuffered to take near exerciſe enough. Nature, for the moſt beneficial purpoſes, ſeems in our early years to have combined two propenſities; activity and curioſity; the deſire to exerciſe our limbs and our ſenſes. And parents will perhaps come at length to diſcover that the beſt method of cultivating the underſtanding, provides at the ſame time moſt effectually for robuſtneſs of conſtitution; and that the means of moſt completely ſecuring both parts of the comprehenſive wiſh of the ſatyriſt

——ut sit mens sana in corpore sano—

are inſeparable. After making this diſcovery, they will aſſuredly ceaſe to ſacrifice their childrens' faculties of mind and body to the idle grammatical ſubtleties of ſchoolmen and monks. They themſelves, it is true, cannot be born and brought up over again. But they ſhould not therefore deſpair of their offspring, whoſe organs may be ſtill undepraved, or if depraved, not irretrieveable. The more ſeverely they may themſelves feel the effect of the maxims under which they have been reared, the more ſedulouſly ſhould they guard, againſt the ſame evils, thoſe in whom they enjoy life a ſecond time, and for whoſe welfare they are often ready to devote their own exiſtence.

The difference in the manner in which the two ſexes paſs the period of their education, is more than kept up in riper years, and produces correſpondent effects. Ladies, even in the country, paſs many days of the fineſt ſeaſon without more exertion

than a ſauntering walk, or a drive in an eaſy carriage. In town, when they quit their cloſe apartments, it is to encounter the dangers, without giving themſelves a chance of the advantages, of expoſure. Hence, in reſpect to delicacy of conſtitution, they have been well compared to flowers brought forward by the cheriſhing heat of the conſervatory. They cannot with impunity bear to be roughly viſited by the winds of heaven. The ſlighteſt cauſe diſorders them, and till the phthiſical period is paſt, they exiſt in a perpetual ſtate of dangerous weakneſs. For in this country, by whatever cauſe women under thirty are weakened, there is always conſiderable hazard of conſumption. It appears as if the impaired power of digeſtion, which from ſuch a mode of life must neceſſarily be almost univerſal, kept them in a conſtant ſtate of preparation for pulmonary complaints. It is common (and inſtances I ſuppoſe muſt have occurred to every phy-

ſician of experience) for female patients to relate how they had long been dyſpeptic or bilious, till accidental cold or wet brought on a cough, after which the ſymptoms of conſumption have regularly taken place, and nothing more has been felt of the complaint of the ſtomach.

In opulent families, I impute it in great meaſure to the indolence of females, that they ſo much more frequently become the victims of conſumption. The buſineſs of life, and active ſports, tend to invigorate the other ſex. The intemperance of men does not afford any ſecurity againſt pulmonary diſeaſe. But, all things conſidered, I can perceive no good reaſon for ſuppoſing that exceſs in reſpect to wine, directly of itſelf induces conſumption, even in the prediſpoſed. I expreſs myſelf in a guarded manner, becauſe I can by no means venture to extend this obſervation to thoſe whoſe lungs are already full of tubercles, or otherwiſe injured.

I think I cannot do juſtice to the preſent important object of conſideration, without queſtioning the opinion which a medical philoſopher, who on many occaſions diſcovers an unexampled niceneſs of diſcrimination, has delivered reſpecting exerciſe. "Numbers of people, ſays Dr. Darwin, (*Zoonomia* II. 692) in our market-towns, of ladies particularly with ſmall fortunes, live to old age, in health, without any kind of exerciſe of body, or much activity of mind." That they live to old age is apparent. Whether they live *in health* is the queſtion. It is a queſtion which every obſerver, whether of the profeſſion or not, can decide with regard to the dowagers of his acquaintance; and who has not ſome among his acquaintance? To me theſe females have appeared to exist in a conſtant valetudinary state; diſſolved by heat; pinched by cold; harraſſed by ſleepleſsneſs on going to bed; unrefreſhed by their tardy morning nap; faint when

empty; oppreſſed when full; and in the intermediate time, ſuffering under ſome of the other plagues of indigeſtion. As their *nerves* ſo commonly require drams in the ſhape of drugs, their comfortleſs exiſtence renders them in every ſenſe the beſt friends of the medical fraternity. To thoſe in narrower circumſtances, the apothecary regularly officiates as privy-counſellor. And from their fee-books it would, I imagine, appear how largely faſhionable phyſicians, from Aſclepiades the Bithynian, to Warren the Briton, have been indebted to the more amply endowed. No ſingle cauſe, perhaps, has ſo effectually retarded the progreſs of medicine, as the inceſſant endeavours of dames of this deſcription, to exalt phyſicians of addreſs above phyſicians of ability—(two qualities, which for very plain reaſons, are ſeldom eminently combined).—To have half a dozen ſuch patroneſſes, has always been better than to diſcover a remedy for the moſt cruel of human diſeaſes.

On the ſubjects of dreſs and habitation, Dr. Cogan's obſervations are fully equal to the moſt perſpicuous ſet of rules that could be framed: and it is not eaſy to conceive more pointed proofs than this correſpondent has brought forward. As I profeſs, in the preſent tract, to build nothing upon ſpeculation, I ſhall content myſelf with referring to Dr. Cogan's letter, and with remarking that, in the habitations of the Dutch, a conſtant cool atmoſphere ſeems, as far as the very important organs contained in the cheſt are concerned, to obviate the evils of female indolence. To what degree external cold may be ſupported by the help of warm cloathing, appears from the example of thoſe women, whom, in ſevere weather, we ſee ſitting beſide their ſtalls in the open ſtreets, for hours together. From the cloſeneſs of Engliſh apartments, and the light dreſs of our countrywomen, it would ſeem as if they were anxious to enſure to themſelves all the miſchiefs which

a rugged and variable climate can inflict. About ſeven years ago, in treating of catarrh, I obſerved: "It has been unfortunate for the inhabitants of this country, that we are not ſubject to ſuch a continued ſeverity of cold as ſhould oblige us regularly to fortify ourſelves by warm cloathing. By linen worn excluſively, we loſe more in health than we gain in comfort; which comfort is perhaps, after all, merely imaginary; for there is hardly an inſtance in which the ſkin does not reconcile itſelf to woollen, though there is no neceſſity for placing it next the ſkin, and cleanlineſs is juſt as much in the power of the wearers of woollen. The moſt ſimple and effectual method to avoid the influence of ſudden changes of atmoſpherical temperature, is to wrap the body in ſubſtances that conduct heat ſlowly. Both for this reaſon, and becauſe it is ſo much leſs unpleaſant when moiſt, flannel ſhould be worn at leaſt above linen, during every ſeaſon in Great-

Britain; and thoſe who find it neceſſary, may double it during the winter, ſpring, and beginning of ſummer." *(Obſervations on calculus*, 1792. p. 160). On the ſame occaſion, I ſuggeſted the poſſible uſe of a portable apparatus for admitting warm air into the lungs in cold weather. This, however, would be cumberſome, and the idea is probably impracticable. On the principle of the Dutch, it is needleſs. Their dreſs protects the ſurface of the body from ſudden chills; and the ſurface of the lungs becomes little ſuſceptible of the impreſſion of a cold atmoſphere.

I fear, however, that this example will have little influence in Great-Britain. To the faſtidious imagination of our belles, theſe good people will exhibit themſelves, under their various coverings, as awkward and diſguſting creatures; and the uſeful leſſon which might be learned from them will, as uſual, be ſet aſide by a ſneer. Yet it ſeems not impoſſible that the ingenuity

which is at preſent exerted in producing mere variety, might conciliate elegance and utility. Dreſs is altogether an affair of aſſociation, and of very remote aſſociation. We ſee the moſt oppoſite faſhions ſuddenly ſucceed each other, without ſcandal to the beholders; and it by no means follows, that a mode in which health ſhould be conſulted, muſt neceſſarily detract from the admiration that would otherwiſe follow the wearer.

It ſhould ſeem, however, that unleſs we could prevail upon ourſelves to make our apartments, by degrees, more temperate and more open, warmer cloathing would be but a ſmall advantage. Indeed, if worn within doors, I apprehend it would be a diſadvantage. Our ladies, however, would undoubtedly ſave themſelves ſome ſuffering by ceaſing to "expoſe themſelves, half-undreſſed, to the fogs and froſts of our iſland." Additional covering in cold weather and cold places will not, it is true,

render the ſyſtem more hardy, but it will often prevent injury for the time.

It would be dangerous ſuddenly to lower the temperature to which the feeble or the delicate have been long habituated. But ſixty degrees of Fahrenheit's thermometer ſhould perhaps never, even at preſent, be exceeded. By gradual reduction we ſhould, I ſuppoſe, without unpleaſant ſenſations, be well able to bear a temperature of fifty degrees. In effecting this change, attention muſt be paid to two circumſtances. A faſhion of warmer cloathing muſt be introduced, and contrivances for keeping the feet warm muſt be adopted. An apparatus of great elegance might be invented, upon the Dutch principle: or the feet, when cold, may be placed upon a cloſe tin veſſel, containing warm water. In various kinds of indiſpoſition, attended with cold extremities, I have for ſome years recommended, with manifeſt advantage, a tin *foot-warmer*; and I underſtand they are now manufac-

tured of a convenient form, by Lloyd, near Norfolk-Street, Strand, London.

How far cloſe, heated apartments, which appear ſo injurious by rendering the lungs incapable of bearing the impreſſion of cold, contribute upon the whole to comfort, the purpoſe for which they are immediately deſigned, is exceedingly doubtful. No human being can be always ſheltered from the rigour of our climate; and there is a well-known law of ſenſibility, which continually tends to render the expedients of indolence abortive. On this ſubject, I hope I may be allowed to produce a paſſage from one of my former publications, as I ſtill entertain exactly the ſame ſentiments.

"In aid of delicacy of conſtitution, art has engaged in many a conteſt with nature. The carpetted flooring, ſtuccoed walls, and double doors of modern apartments, are intended as its ſcreen. But theſe, even if they were to be reinforced by the double windows of the north, would be an una-

vailing protection. Nature, brandiſhing her ſcourge, purſues with quicker ſteps than thoſe who forſake her ordinances can retire. The ſuſceptibility of impreſſion increaſes faſter than ingenuity can bar out external agents; and in the beſt ſecured fortreſs of effeminacy, it is the fate of the occupant to ſhiver more at the inclemencies of the ſeaſons, than the mountaineer who is expoſed to all the blaſts of winter." (*Lecture introductory to a courſe of popular inſtruction,* p. 28. Johnſon).

To render the foregoing repreſentation more clear and convincing, I add a few explanatory reflections on the particular manner in which a cold or variable climate affects different people. The attentive reader will have remarked, that not only the more active part of the labouring claſs in Scotland, but alſo the hardy and weather-beaten tribe of butchers, fiſhwives, ſailors, and keelmen, frequently experience rheumatic and other inflammatory ſeizures.

Theſe are viſibly produced by conſiderable and ſudden changes of temperature. Reſpecting the manner in which this effect takes place, medical reaſoners are by no means agreed; ſome ſuppoſing mere cold to be the agent; others, that the *ſubſequent* ſtimulating power of heat is neceſſary; juſt as in frozen limbs, incautiouſly heated, inflammation runs ſo high as to induce mortification, which is but a different degree of the ſame operation.

Whichever of theſe be the order of nature, it is eaſy to ſee how a cold climate will act. Circumſtances will prepare certain parts for the influence of cold alone, or of cold ſucceeded by warmth. Thus a workman whoſe employment neceſſitates ſtrong action, will have the muſcles of the limbs which he exerts moſt, in a ſtate to be moſt affected by cold. If he ſhould be chilled or wetted on his way home, he will approach the fire with as little ſuſpicion of injury as the moth ruſhes into the candle.

The ſuppoſition, therefore, (which ſeems to me perfectly eſtabliſhed by exact obſervation), that inflammatory affections are the effect of heat, or other ſtimuli, acting on chilled parts, accords as well with the practice of life, as the ſuppoſition that they ariſe from direct cold. It is eaſy, either way, to underſtand how they ſeize the moiſt membrane that lines the noſtrils, on the throat, or the cheſt, aſſuming the form of cold in the head, or quinſy, or pleuriſy, juſt as when circumſtances direct the action of the powers towards the muſcles, rheumatiſm is produced. Thus perſons much expoſed will be much ſubject to rheumatiſm, and analogous complaints. Whatever might be the effect of caution in avoiding ſudden heat, a robuſt habit will be no protection. But the conſequences to the lungs of catarrhs, or common colds, will depend entirely on the habit. On this ſubject I ſhall ſay a few words below.

In perſons habituated to heated apart-

ments, what will be the part moſt prepared for the effect of a cold atmoſphere? Will it not be preciſely the lungs? Does not this appear to be the principal or ſole cauſe why, in England, women are more ſubject to pulmonary diſeaſes than in Holland? In the Weſt-Indies do they not eſcape conſumption, becauſe though the prediſpoſition or *interior* cauſe is preſent to a greater degree than in women at home, the exciting or *exterior* cauſe is wanting? Is not this fully confirmed by the obſervation, that females, when they come from the Weſt-Indies to reſide in England, are exceedingly ſubject to conſumption. No perſon, I preſume, accuſtomed to obſerve our female victims to conſumption (I ſpeak of the more opulent claſs), can contemplate Mr. Edwards's portrait of the Creole women, without conviction of their ſtronger prediſpoſition to the diſeaſe.

"The ladies of theſe iſlands (ſays their elegant hiſtorian), have indeed greater

cauſe to boaſt of this fortunate exemption (from fatal inflammatory diſorders) than the men; a preeminence undoubtedly acquired by the calm and even tenour of their lives, and by an habitual temperance and ſelf-denial. Except the exerciſe of dancing, in which they delight, *(how like the ladies at home?)* they have no amuſement or avocation to impel them to much exertion of either body or mind.------In their diet, the Creole women are, I think, abſtemious even to a fault. Simple water, or lemonade, in which they indulge, and a vegetable meſs at noon, ſeaſoned with cayenne pepper, conſtitutes their principal repaſt. The effect of this mode of life, in a hot or oppreſſive atmoſphere, is a lax fibre, and a complexion in which the lily predominates rather than the roſe. To a ſtranger newly arrived, the ladies appear as juſt riſen from the bed of ſickneſs. Their voice is ſoft and ſpiritleſs, and every ſtep betrays languor and laſſitude.------In one

of the principal features of beauty, however, few ladies excel the Creoles; for they have, in general, the fineſt eyes in the world; large, languiſhing, and expreſſive." (*Hiſtory of the Britiſh Colonies in the West-Indies.* ii, 10). The whole of this delineation, and particularly the laſt words, left me little doubt reſpecting the appearance of the eyes. But as a celebrated phyſician in this country holds a large pupil to be the ſign of a prediſpoſition to conſumption; and another in Germany holds a large pupil, with blue eyes, to be an eſſential ſign of the ſcrophulous conſtitution*, and even to denote a ſcrophulous affection of the meſenteric glands, I thought it worth while to enquire of Mr. Edwards concern-

* Mehrentheils blaue augen, und der Augenstern weit und gross. (Diess verraeth sehr oft schon den verborgenen Feind im mesenterium). *Hufeland Skrofelkrankheit Jena* 1795. *S.* 115. Mr. Warner, however, is said to have first pointed out this dilatation of the pupil (*mydriasis*) as general in scrophula.

ing this particular, distinctly. The reader is apprized of his answer.

The temperature of the air in France, Italy, and even in Portugal is, I suppose, at times sufficiently rigorous to injure weak lungs. But concerning the comparative frequency, and the causes of disease in these countries, I would be understood to speak with a diffidence proportionate to my want of minute information. As little can I say satisfactory concerning the origin of consumption in Madeira, where the climate is so uniform, and where the inhabitants are far from indulging in artificially heated rooms. Only this I have been told by those who speak from their own feelings, and their own observation, that the difference of temperature is exceedingly sensible on moving from the valleys to the higher grounds, and that *catching cold* is an accident, to the full as common as in England.

The occaſional connection between catarrh and conſumption---the connection between the ſcrophulous temperament and conſumption---and the formation of tubercles, are queſtions, of which the ſolution is eſſential to the theory; and if I judge rightly, the ſolution of each is neceſſary to the complete ſolution of the others. But I forbear to conſider theſe topics minutely at preſent, partly becauſe a ſtill more accurate examination of morbid appearances in the dead body is wanting, and partly becauſe the diſcuſſion would be matter ſcarce fit for the peruſal of any but the inſtructed phyſiologiſt. But as the tribe of empirics have always taken advantage of the inaccurate ſentiments that prevail concerning the firſt of theſe queſtions, to frighten the public into the purchaſe of their uſeleſs compoſitions, and as the others are highly intereſting, I ſhall attempt, with ſincere diſtruſt of my talent for expoſition, a little to aſſiſt the conception of ordinary readers.

The formation of new parts (whether natural or excreſcent), the removal of old parts (a proceſs which we ſee exemplified when the ſkin is *eaten away* by ulceration), and the too great, too little, or proper lubrication of moiſt ſurfaces, depend upon a balance between two oppoſite ſets of agents. One brings ſupplies; the other in equal time carries away part, or the whole, or more than the whole of what the other brings. One is *exhalant*, the other *inhalant*. The agents or veſſels that convey, are the arteries with their appendages: thoſe that carry away, are the abſorbents. Of that which is conveyed, and that which is carried away, the quantity and quality differ according to the ſtate of theſe two ſets of veſſels. Thus in a ſtrong man, the diſcharge from an ulcer ſhall perceptibly differ from the diſcharge from an ulcer in a weak man---the matter filling the puſtules of the ſmall pox ſhall differ in different conſtitutions---but make the weak man ſtronger

by wine, food, or medicine, and the diſcharge or matter in the puſtules, ſhall alter in quantity and quality. At the ſame time, the ſtrokes of the arteries may be felt to be altered in number and force.

When a ſtrong, cold wind blows upon the eye, the liquid, which in a healthy ſtate of that organ but just ſuffices to keep the ſurface moist, overflows in profuſion. We ſee the ſame thing happen with regard to the noſtrils. In theſe caſes, the evident deſtruction of the balance between the two ſets of veſſels, appears to depend on the leſſened power of the *abſorbent* veſſels. Many phænomena render it credible, that by the firſt impreſſion of cold (whether on account of their poſition or ſtructure) theſe are commonly weakened more than the arteries. When the ſurface of the lungs, in the act of reſpiration, is repeatedly ſwept by cold air, the balance between the oppoſite ſets of veſſels is altered; and the more perhaps in favour of the arteries, as

the organ or the conſtitution is weaker. The weaker alſo the abſorbent veſſels, the longer before the diſturbed equilibrium is reſtored. A bliſter continues to diſcharge much longer in the weak than the ſtrong.

When any of the above-mentioned ſurfaces are inflamed, the balance is alſo loſt. At firſt there is too little moisture. Dryneſs is felt on ſenſible ſurfaces, as that of the noſtrils, or *huskineſs* in the throat. Here the abſorbents act with unequally increaſed power.---Afterwards there is an exceſs of ſecreted moiſture, as is ſeen in the expectoration, and in the diſcharge from the noſtrils. In old, weak people, a bad cold often occaſions ſuffocation; ſo great is the quantity of ſecretion, or ſo little that of abſorption by the veſſels on the ſurface of the lungs: and in the greater or leſs viſcidity, the yellowneſs or greenneſs of the expectorated matter, a variation of quality is manifeſt. Diſeaſed ſecretions from the lungs differ in all degrees, from the

tenuity almost of water, to the hardneſs of ſtone. The ſecretion, in theſe caſes, is not confined to the ſurface; it extends to the whole ſubſtance of an organ, which is lax, ſpungy, or full of innumerable ſmall cells, communicating with one another. In colds, the thickening of the membrane of the noſe, and the ſenſe of fullneſs in the cheſt, probably ariſe in part from exceſs of interior ſecretion, without adequate increaſe of abſorption.

From the altered balance between the two ſets of veſſels, together with the altered quantity and quality of the matters exhaled and inhaled, let us try if we cannot form an idea of the ſcrophulous enlargement of the glands, of the formation of tubercles, and of the effect of colds, both when they go off without injury, and when they are followed by conſumption.

Leſt I ſhould ſcandalize the anatomiſt, who knows that no glands have been found in the cellular ſubſtance of the lungs, I

think it proper to declare, that it is not my intention to repreſent the ſcrophulous enlargement of glands, and the formation of tubercles, as identical, but merely as analagous proceſſes.

In ſcrophulous ſwellings of the glands, the abſorbents act more feebly than the arteries. More is conveyed than is carried away. Hence there is probably a more than natural depoſition of moiſture in the cells, and certainly an increaſe of ſubſtance. By this very accumulation, the action of the arteries ſeems conſiderably altered; and the gland commonly becomes full of a matter of ſoft conſiſtence, like curd mixed with cream. A mixture of the ſame kind often fills pimples that riſe on the face and other parts. They are filled exactly in the ſame way, by the preponderance of the power of the arteries, and by their altered action. A ſubſtance is thrown out, which the abſorbents do not remove at all, or not ſo faſt as it is accumulated.

Thoſe ſubſtances, which on account of their hardneſs are called ſtones, are formed by an operation preciſely ſimilar.

Should any cauſe ſo alter the action of the arteries, that a hard particle is thrown out into the looſe cellular ſubstance of the lungs, and ſhould the abſorbents be unable to remove it, the foundation of a tubercle will be laid. Accretion may take place, not only from the continued action of the original cauſe; but it appears that the nucleus itſelf may act ſo as to make the arteries throw out more of this ſubſtance. An experiment, tried, I believe, by Dr. Haighton upon an animal particularly exempt from conſumption, ſeems ſtrongly to confirm this very ſimple reaſoning. Two drams of quickſilver were thrown into one of the veins of a dog. In leſs than two days a degree of feveriſhneſs followed, as appeared from the hardneſs and quickneſs of the pulſe. Difficulty of breathing, and cough, quickly ſucceeded. Theſe ſymp-

toms increaſed till the death of the animal. On diſſection, tubercles were found in the lungs. Many of theſe tubercles were full of purulent matter; and on cutting open thoſe which were ſtill firm, a globule of quickſilver was diſcovered in the center of each, "forming a kind of nucleus to the circumſcribed inflammation or tubercle." (*Saunders on the liver.* p. 236). Here it is evident that the quickſilver, having been delivered by the veins to the heart, and by the heart to the arteries, was by them thrown out into the cellular ſubſtance of the lungs, and probably into that of the whole body. The abſorbents not being able to remove it from the lungs, the arteries were ſtimulated to ſecrete the matter of which the tubercles conſiſted.

When bruiſes, falls, and hard, rough powders injure the cheſt, the arteries must be stimulated to ſecrete an unhealthy ſubſtance, which the abſorbents do not take up again. For this purpoſe a material

stimulus is not neceſſary. It is eaſy to conceive that variations of temperature may act in the ſame manner. And this conſideration will enable us to understand why catarrh ſhould ſometimes produce conſumption. When a *cold* affects the chest, the destruction of the balance between the arteries and abſorbents is obvious. But it may be very differently destroyed in the robust and the feeble. The arteries may throw out upon the ſurface, and into the ſubstance, of the lungs, one kind of matter in the robust, and a very different kind in the feeble. And in one, before the complaint is terminated, the abſorbents may take up the whole of what is thrown out; in the other they may leave the whole, or a part. No other circumstance more distinguiſhes the strong constitution from the weak, than the power of the abſorbents to reinstate in its former condition, an organ in which the balance between them and the arteries has been deſtroyed.

By *ſtrength of conſtitution*, I need ſcarce ſay that I do not mean abſolute muſcular power, but the power of vigorouſly performing the functions appropriate to the age. This ſtrength of conſtitution the infant may poſſeſs as well as the adult.

The experiment with the dog ſeems to explain (what has not been well underſtood) the range of time during which tubercles are formed in different inſtances. The quickſilver, almoſt immediately producing fever, and the other circumſtances, ſeem to prove that the ſecretion from the exhalants was ſoon changed, and that tubercles began to form in leſs than eight and forty hours. This gives to underſtand, why in certain habits, conſumption ſucceeds catarrh without any interval. The tubercular proceſs is often, as we ſhall ſee, infinitely ſlow. Diſorders of the ſame denomination, by reaſon of the term that muſt elapſe before a certain effect is produced, are often diſtinguiſhed into *acute* and *chronic*. The

diſtinction would be no where more applicable, if endleſs intermediate gradations did not render it impracticable to draw any line in the caſe of tubercles.

More completely to inveſtigate the ſcrophulous ſource of phthiſis, many years ago, with theſe views, I propoſed to different anatomical friends, to compare the matter of tubercles with the matter of enlarged meſenteric glands, when this complaint accompanies or precedes conſumption, as very often it does.* The ſimilarity of the matter would prove the ſimilar action of the veſſels by which both are produced. It is, I apprehend, a great miſtake, to ſuppoſe that ſcrophulous diſeaſe may not ariſe in parts not glandular.†

* "Very often I have found the tabes mesenterica, which is a scrophulous affection, joined with the phthisis pulmonalis." Cullen's practice of physick. DCCLXXIX.

† Systema quidem lymphaticum primariam morbi nostri sedem constituit virusque scrophulosum tantum

The abſorbent veſſels having been every where diſcovered except in the brain, that deſtruction of balance which I have ſo frequently mentioned, may take place in the degree appropriate to ſcrophula, even where there are no glands. It muſt however be obſerved, that experience proves glands to have a ſtructure peculiarly favourable to this ſort of diſordered action.

My friend, Mr. Bowles, ſurgeon in Briſtol, (a ſkilful anatomiſt, and experienced obſerver of diſeaſed appearances), whom I long ago requested to compare the ſubstance of tubercles, and of ſcrophulous lymphatic glands, when he found them together in the ſame ſubject, has favoured me, in a letter dated April 5,

non semper primos decubitus facit in glandulas conglobatas sive lymphaticas. Minime vero ad hasce solas adstringuntur scrophulosi tumores, prout inepte asserit Cl. Diel, sed si invaluerit malum penitiusque insederit, alius quoque generis glandulæ, quinetiam *partes non glandulosæ* ab eodem afficiuntur. Kortum l. c. I. § 9.

1799, with the ſummary of his obſervations. "I have not noted down any obſervations on the reſemblance between tubercles and diſeaſed meſenteric glands, but in the examination of dead bodies, I thought I could diſcover ſeveral proofs of affinity between them.---Their different ſtages are ſimilar, tubercles are frequently found almoſt as hard as cartilage, apparently inorganized, and on trial, impervious to injection: diſeaſed meſenteric glands are met with in the ſame ſtate, except that I have not yet endeavoured to inject them. In other inſtances they are both found to contain a curdlike matter floating on a thinner fluid, and ſometimes I have diſcovered oſſific matter in them both. *In caſes of tubercular phthiſis, I have repeatedly ſeen the meſenteric glands ſo ſimilar in appearance to the tubercles, that if the latter had been removed from the ſurrounding lungs, I do not think it would have been poſſible to diſtinguiſh between them.*"

In a conſumptive patient, who expectorated ſtony concretions along with purulent matter, and whoſe lungs after death were found full of tubercles, I obſerved the ſame kind of ſtony concretions in the lymphatic or abſorbent, bronchial glands; a proof that the ſame kind of action had taken place in the veſſels both of the ſubſtance of the lungs, and of thoſe glands. It would be well worth while to ſubject the morbid matter found in tubercles, and in ſcrophulous meſenteric glands, as well to chemical teſts, as to further inſpection.

Theſe conſiderations ſeem ſufficient to prove the reſemblance between the ſpecies of ailment termed ſcrophula, and the production of tubercles in the lungs. But tho' they were perfectly identical, they ought not, according to the laws of the animal œconomy, always to co-exiſt. Neighbouring parts, and ſimilar parts, ſometimes fall into the ſame action, and ſometimes they do not. *One* eye may be in-

flamed, or it may draw the other into conſent. The correſponding tooth on the oppoſite ſide may follow its fellow into decay, or not. This diverſity of event may depend on the conſtitution of a part, or on intervening circumſtances, that eſcape notice. But the analogies are ſufficient to make it appear quite in order, that conſumption, though ſo often preceded or accompanied by ſcrophula, ſhould nevertheleſs often ſeparately occur. We have ſeen Mr. Carliſle (p. 70 *above*) noticing a kind of conſumption, where the lymphatic glands at the root of the lungs were ulcerated, the ſubſtance of the lungs being ſound. Future enquiry may perhaps teach, that what has occurred to Mr. Carliſle, of the infrequency of conſumption in "perſons afflicted with ſcrophulous affections of the ſuperficial lymphatic glands of the large joints or bones (when ſcrophula attacks theſe parts early in life)," is not general. It is at the ſame time poſſible,

that ſcrophulous affections of other parts may more uſually accompany the phthiſical diſpoſition of the veſſels in the lungs. So endleſſly diverſified are the ſtates of the living ſyſtem, and of its ſeparate organs! The affections themſelves, which we claſs under the title *ſcrophula*, when minutely examined, are conſiderably different from one another; and it would be more agreeable to the courſe of nature, to regard ſcrophula, and the tubercular conſumption, as depending upon a kindred ſpecies of debility, occupying different ſeats, in conſequence of which they alternate, or concur, or ſhew themſelves apart, as they are influenced by a variety of external and internal cauſes.

The relation which pulmonary conſumption bears to a certain age, and the cauſe of that relation, are queſtions which may juſtly excite the curioſity of the reader. But the phyſiological information we at preſent poſſeſs, does not enable us to gratify that

curioſity. A medical philoſopher of great diſtinction obſerves ; " There has always appeared to me two kinds of pulmonary conſumption, one of which begins with ſlight hæmoptoe (ſpitting of blood), and which is generally ſeen in dark-eyed people, with large pupils ; and the other which commences without hæmoptoe, and which is generally ſeen in light-eyed people, with large pupils. The aperture of the pupil, in both theſe kinds of conſumption, is generally large, which evinces the inirritability of the eye, and thence perhaps in conſequence, the inirritability of the whole ſyſtem. The former of theſe conſumptions is generally hereditary, without any appearance of ſcrophula ; and the latter with appearance of ſcrophula, in the preſent, preceding, or third generation upwards. The former commences more certainly between the ages of ſeventeen and ſeven and twenty ; the latter attacks people of all ages." *(See Dr. Darwin's*

letter of Jan. 17, 1793, *ſubjoined to the author's* LETTER TO ERASMUS DARWIN, M. D. p. 64). In ſix years (that have elapſed ſince this letter was received) of unintermitting attention to the conſumptive, I have remarked that the conſumption of the dark-haired, beginning with ſpitting of blood, bears a ſmall proportion to that variety which does not begin with ſpitting of blood. Of about twenty conſumptive patients, of whom I have at preſent the charge, the diſorder commenced in one only with hæmoptoe; and from all I have obſerved, I ſhould think the proportion could ſcarce exceed one in ten. Sufficient pains have not been taken to examine the lungs of this diviſion of the phthiſical. It would be deſirable to know if they were always filled with tubercles, and if ever the nucleus of a tubercle conſiſts of coagulated blood. This variety of conſumption has occurred to me nearly within the limits ſpecified by Dr. Darwin.

But though I have known both infants (as was aſcertained by diſſection), and the aged, affected with the other variety, yet that alſo has far moſt frequently occurred between the ſeaſon of puberty, and the five and thirtieth year.

This circumſtance muſt depend upon ſome original or acquired property of the living ſyſtem, not yet fully elucidated; to which the too great confinement of young people, particularly of young women, may give greater effect. Is it that the abſorbents of the lungs have generally leſs power in proportion to the arteries about the phthiſical period? Children, if I miſtake not, in the latter ſtage of catarrh, expectorate much leſs than grown people. I do not ſpeak of infants who have not learned to perform the ſeries of motions neceſſary to expectoration, but of thoſe who are old enough to expectorate all the ſuperabundant ſecretion in the cheſt. In children, when the lungs have been greatly weakened

by ſome diſeaſe, as the meaſles, and a cold is taken, large expectoration eaſily follows, and conſumption itſelf. As hæmoptoe ſcarce occurs in children, the power of the veins to carry on the circulation in the lungs, muſt at that age be equal to the power of the arteries; and between the veins and abſorbents, there is an obvious analogy of function; for of the colourleſs fluids, that in the ſtate of health are not diſcharged from the body, there is alſo a circulation; the exhalants carrying them from the heart, and the inhalants, or abſorbents, carrying them back again. Tubercles form in advanced life, when the abſorbents of the lungs are weak; and it is obſerved by Mr. Kilgour, that among the old fiſhwives, conſumption, in ſome rare inſtances, occurs after the cheſt has greatly ſuffered from colds (pp. 54—55); which confirms the preſent ſuppoſition, and ſeems to prove (what I have long ſuſpected), that frequent and ſevere catarrhs

ſometimes generate a phthiſical diſpoſition; a fact of ſome importance in eſtimating the effect of cold climates.

The growth (and often the rapid growth) of the phthiſical, in all the ſtages of the diſeaſe, is a phænomenon that muſt have arreſted the attention of thoſe medical men who think concerning what they ſee. We frequently obſerve, that one function is vigorouſly performed long after another has been greatly impaired. Nor has any one been completely able to distinguiſh how wheel propels wheel in the movements of the animal machine. The appoſition of new matter depends on the arteries. But phyſiologiſts obſerve, that the abſorbents have a large ſhare in the formation of new parts; whence it would follow, that in the reſt of the ſyſtem of growing conſumptive people, the abſorbents are active, however inert they may be in the lungs.

It is often aſked, whether conſumption

has become more frequent in modern times. To give a certain anſwer, we ſhould be acquainted with the population of the country at different periods, and the number of deaths from this diſeaſe. But in the total want of ſuch documents, the deciſion of the queſtion muſt reſt with the philoſophical antiquary, who will perhaps be moſt ſafely guided in his inveſtigation by an analytical conſideration of the cauſes that affect the habit. Accuracy would require, that in ſome inſtances, the condition of different orders of ſociety, and of the ſexes, ſhould be ſeparately conſidered.

It ſeems probable, that the general diet of former centuries was more invigorating. The opulent of both ſexes, appear to have participated rather more largely of animal food. Mr Strutt (*View of manners, cuſtoms*, iii. p. 110) ſpeaking, on the authority of ancient chroniclers, of the time of Henry the eighth, Elizabeth, and ſome

ſucceeding ſovereigns, obſerves, that "in thoſe days, when coffee, with various other like ſlops, were not known, it was no uncommon thing for the chief lords and ladies of the court to breakfaſt upon a fine beef ſteak broiled, with a cup of ale, and that at eight, or perhaps nine o'clock in the morning, at fartheſt. They then uſually dined at midday, or one o'clock, and ſuch as eat ſuppers, moſt commonly ſate down to meat about ſeven, or a little before, in the evening." The ſame author quotes a play of that period, in which a citizen declares, he has ſent his daughter in the morning as far as Pimlico "to get a draught of ale to fetch a colour into her cheeks." Holinſhed (*Deſcr. of Britain*, p. 94.) after ſaying that "the gentlemen and merchants keep much about one rate, and eache contenteth himſelf with foure or five or ſix diſhes, when they have but ſmall reſorte, or peradventure, with one, or two, or three at moſt, when they have no ſtraun-

gers to accompanie them at their own table," adds: "The artificer and husbandman make greateſt account of ſuch meate as they maye ſooneſt come by, and have it quicklyeſt readie: *their foode alſo conſisteth principally of beefe, and ſuch meate as the butcher ſelleth, that is to ſay, mutton, veal, lamb, pork.*"

The political œconomiſt could perhaps throw ſome light upon the nature of diet, by determining whether the proportion of paſturage to population would not furniſh each individual with a larger proportion of animal food in paſt ages.

The hour of meals ſeems, as far as this circumſtance can have effect, to be leſs favourable to health in modern times. After a ſlight breakfaſt, we expoſe ourſelves for many hours to the rigour of our climate, and take our principal meal, juſt as we are about to ſhut ourſelves up in our warm apartments. But as dinner, on account of the ſubſtances of which it conſiſts,

imparts to the ſyſtem a permanent power of reſiſting cold in a much greater degree than breakfaſt, it would probably be more wholeſome to invert theſe meals in winter.

The vegetables formerly in uſe, ſeem likewiſe to have been more ſtrengthening. Theſe were, I ſuppoſe, in winter, preparations of wheat, rye, barley, oats and peaſe. The cuſtom, ſtill preſerved in old-faſhioned families, of beginning dinner upon pudding, ſeems to ſhew how much dependance was placed on farinaceous ſubſtances; for when the diſhes brought to table are not numerous, that which is taken firſt, will conſtitute a large portion of the meal. And as the old Engliſh, or Saxon, pronunciation, is preſerved in our northern counties, and in the lowlands of Scotland, ſo I imagine porritch, (or haſty-pudding of oatmeal), crowdie, frumenty, ſowens, bannocks of different kinds, peaſe-kail, are ſo many diſhes which were general before the introduction of potatoes. This root, as far as it has

ſupplanted grain, has probably contributed to the degradation of the human ſpecies. I had heard much of the ſtout appearance of the poorer Iriſh, and I was ſo much the more ſurpriſed to find the few families, which I ſaw in their native cabins, abound beyond any example that had occurred to me, in ſickly, ſcrophulous, and apparently ill-nouriſhed objects. I wiſh that a fair and extenſive enquiry were made among thoſe of the Iriſh who have hardly any other food, except the potatoe—of which the utility as a ſupplementary article, and as a reſource againſt famine, muſt be fully acknowledged. But I doubt whether it ought to be depended upon as the ſtaff of life. I ſuſpect it to be much too ſlender to ſupport ſuch a burden.

The ſubject of exerciſe would require to be treated with great diſcrimination. Upon the whole, I think, a change has taken place, unfavourable to health. Since the feudal times, the bodily condition of the male

ſex in the different ranks of ſociety, appears to have been reverſed. The knights and nobles prided themſelves on being more athletic than their vaſſals. By their ſuperiority in this reſpect, and the heavier arms which that ſuperiority enabled them to bear, an hundred knights were accounted an overmatch for a thouſand light-armed horſemen.* But it is not only the hiſtory of their proweſs, confirmed by the examination of their armour, that depoſes in favour of the ſuperior ſtrength of the ſons of ancient chivalry. Their corporeal remains have convinced careful obſervers of their herculean form. One of theſe obſervers, ſpeaking of the bones preſerved at Murten, as a monument of the victory of the Swiſs over the Burgundians, remarks,

* C'etoit la Gendarmerie (that is, the heavy armed knights) qui faisoit toute la force de l'armée. Une ancienne chronique dit, que cent gendarmes suffisoient pour battre mille autres cavaliers, armés à la legére. *Encyclop. methodique. Art militaire.* p. 557.

that " the 300 years during which theſe bones have been expoſed in great meaſure to the open air, have little affected their prodigious firmneſs of ſtructure. Such bones and parts of bones as now moulder down in a few years of expoſure, were evidently firmer than in the recent ſubject. From rubbing in my box they acquired, here and there, the poliſh of the enamel of the teeth. Out of the charnel-houſe at Murten, I ſelected ſkulls that atteſted the ſtrength of the ſtroke by which, as appeared from the marks, the helmet was cut through, and which, being pierced in the orbits by the point of the ſpear, probably belonged to knights, ſince the ſpear would be directed againſt this, as the leaſt protected part. I ſtill poſſeſs theſe ſpecimens; and I conſider them as an incontrovertible anſwer to the queſtion, *how theſe knights could wear armour, inſupportable by the preſent race?*---They were more healthy and athletic than we are.

Of theſe reliques of ancient heroes, I choſe ſome, in which the ſtill growing teeth beſpoke youth; others where the half-blunted teeth beſpoke mature age, and others in which the advance of life appeared from the wearing down, and the loſs of the teeth; a proof that the young and old could wear armour, under which our ſtouteſt men could ſcarce ſtand. This ſingular firmneſs was common to all the bones, and therefore to both Swiſs and Burgundians. In the armoury at Berne, I had before ſeen by thouſands, helmets, breaſtplates, battle-axes, and ſwords, that were won in that battle. I conjectured that theſe arms belonged to a ſtouter generation than ours, and I found my conjecture verified by the bones themſelves. In theſe obſervations there cannot be any fallacy, as no foreign matter has inſinuated itſelf into the ſubſtance of the bones." (*Ebell ueber die bleyglaſur. Hannover*, 1793. ſ. 220.)

Hunting and hawking ſucceeded to the ſeverer toils of chivalry, and prevented the higher claſſes from declining rapidly below the corporeal ſtandard of their inferiors. Within theſe few years, we may have obſerved the rapid progreſs of indolent indulgences; exerciſe on horſeback nearly abandoned for the uſe of eaſy carriages; the pernicious habit of deſultory reading for amuſement occupying many hours of the day; and thoſe gratifications preferred, which can be enjoyed with leaſt exertion.

The methods that have been introduced of tranſacting buſineſs with greater eaſe, the converſion of paſture into arable land, and perhaps other cauſes, have rendered the claſs of farmers leſs hardy. In Ireland, an evident change of this kind has taken place, under the eye of perſons now living. For the following communication, I am indebted to a perſon of nice obſervation; the facts do not the leſs apply to the preſent enquiry, becauſe no mention is made

of pulmonary diſeaſe. Conſumption is not the only ailment to which the puny are liable; but in our climate, its frequency will be nearly in proportion to conſtitutional feebleneſs.

" The obſervations I had mentioned to you, were made on the ſmall gentry of a remote country in the north weſt of Ireland. Though they have uniformly indulged in the pleaſures of the table to great exceſs indeed, they have enjoyed nevertheleſs a degree of health, which has always amazed me. Several, upwards of ſeventy years old, and ſome, in *extreme old age*, have aſſured me, that they never ſuffered a weeks' ill health in the whole of their lives. Theſe habits ſeem, however, to have been fatal to their deſcendants. Some have already fallen victims to intemperance, and ſome, under the age of forty, are palſied and greyheaded, and ſhew evident ſymptoms of premature decline. I could never obſerve any difference in their

general habits of living, except in the ſingle article of more or leſs exerciſe: the old gentlemen, either from buſineſs or pleaſure, paſſed almoſt every day in the open air, and on horſeback: the juniors ſpend a more indolent and ſedentary life, as from the encreaſing agriculture of the country, they can procure a greater income by letting their eſtates to farm, than by paſturing them on their own account, as had been the uſage heretofore; at the ſame time, that the conſequent improvement and encloſure of the country throws obſtacles in the way of the chaſe and other rural amuſements."

The greater number of artificers, employed at ſedentary occupations in cloſe rooms, would alone be ſufficient to juſtify us in affirming the greater frequency of conſumption, upon the whole, in modern times. In comparing the manufacture of many articles of luxury with their deſtination, it would appear as if there exiſted

a ſolemn compact, in virtue of which one ſet of perſons had engaged to deſtroy their health in making what another ſet were to deſtroy their health in wearing.

From the ſpirit of imitation it may be concluded, that the children of active parents would delight in feats of activity; and they would no doubt be encouraged in this propenſity. A copy of verſes, quoted by Mr. Strutt, from a manuſcript in the Harleian library, would be deciſive for the aera of the Tudors, with regard to the young of both ſexes, if we could rely on the authority of the rhymer.

Auntient customs in games uſed by boys and girles, merily ſett out in verſe:

Any they dare challenge for to throw the ſledge,
To jumpe or leape over ditch, or hedge;
To wraſtle, play at ſtoole ball, or to runne,
To pich the barre, or to ſhoote of a gunne;
To play at loggets, nine holes or ten pinnes,
To trye it out at foote-ball, by the shinnes
At tick tacke, ſeize nod, maw and ruffe,
At hot cockles, leap frogge, or blind man's buffe:
To drink at the halper pottes, or deale at the whole can,
To play at cheſſe, or pue or inkehorne

To daunce the moris, play at barley brake,
At al exploits a man can think or ſpeake,
At ſhove groate, venter poynte, or croſs and pile,
At beſhrew him that's laſt at any ſtile;
At leaping over a Chriſtmas bonfire,
Or at the drawynge dame out of the myer,
At ſhoote cocke, Gregory, ſtoole ball and what not,
Picke poynte, toppe and ſcourge to make him hot.

The proportion of active games in this liſt, is ſufficient for all purpoſes of health; but it does not well appear how the *girles* could partake in them all.

The ancient uſe of horſes, on occaſions where carriages are now employed, muſt have given females ſome advantage in point of air and exerciſe. The paſſages which deſcribe the feaſts and ſports of former ages, ſeem, if one may argue from the practice of the court to general practice, to ſhew that women were more ready to exert their limbs, and that life languiſhed leſs, than at preſent. Thus immediately after dinner—

To daunce they went, all in ſame,
To ſe them playe, hyt was fayr game,
A lady and a knyght - - - - - -
Ther they playde, for ſothe to saye,
After mete, the ſomerys daye,
All what hyt was neyr nygt.

Tilts, tournaments, mayings, hawking, archery and other diverſions, if they did not put the ladies to much exertion, would take them abroad; and they would the leſs ſhrink from the contact even of a cold atmoſphere, from having been inured to unequal temperatures and ſtreams of air in their open and ill-finiſhed apartments, even if a warmer dreſs did not afford its protection.

All theſe topics would require to be treated with greater minuteneſs and with diſtinct reference to the ſeveral periods of our hiſtory. I cannot be certain that, on a ſtrict ſearch, no counteracting cauſes would be diſcovered. I can however think of none which could bring the conſtitution of that claſs of our predeceſſors which was placed above the want of neceſſaries, and particularly of the women, to ſo low an ebb of debility, as it has been reduced by modern uſages.

The time perhaps approaches, when the

Britiſh fibre ſhall be reſtored to its priſtine tone, and the diſpoſition to conſumption eradicated. But to this generation the remedy will be worſe than the diſeaſe. By the privations which we can ſcarce now eſcape, and the diſaſters to which all feel that we are expoſed, one portion of the feeble will be rendered hardy, but alas, it is to be feared, that another portion will ſink under the trial. We are aſſured that hyſterical and hypochondriacal diſorders have lately diſappeared from among the inhabitants of a neighbouring country. But at what a price has the exemption been purchaſed!

Thus I have endeavoured to trace the principle of connection between the facts related in the preceding ſections. Objections, good or bad, may be ſtarted againſt my explanation. Let it therefore be remembered, that the facts ſtand on their own diſtinct ground; and that no inter-

mediate reaſoning is neceſſary to connect them with phyſical education, of which it is unqueſtionably, in this country, the moſt important object to eradicate all tendency to conſumption.

Of the PHTHISICAL EXTERIOR.

Having ſaid ſo much of the affinity between ſcrophula and conſumption, I ſhall briefly mention the principal indications of a ſcrophulous habit. Before the complaint has fixed upon any particular part, ſcrophulous children have commonly a full countenance, large veins (which perhaps are a ſign that the veins have leſs power than the arteries), ruddy cheeks, and uſually, light eyes, with a wide pupil. The hair is ſoft; the noſe thick, the upper lip ſwoln. The whole ſyſtem is puny, and the fleſh feels flabby; the body, however, is plump, and the ſkin ſmooth. Swellings of the glands are perceived about

the neck and a whole chain of tumours may often be traced in this part. Some of theſe tumours gather and break, and when one is healed, another near it gathers and breaks, and ſo on in ſucceſſion. Pain in the ear, with a diſcharge of matter, repeatedly occurs. The eyes are apt to inflame, and the clear part of the eye acquires white opake ſpots, which ſhift from place to place. Many ſcrophulous children have quick and lively parts.

The diſorder, however, ſhews itſelf in a different form, eſpecially in poor families, where children are fed on water-gruel and potatoes. The countenance is then pale, bloated, and what medical writers term *cachectic*. The upper lip is particularly tumid. The eyes are dull inſtead of bright. Privation and pain neceſſarily produce ill-temper, and ſometimes ſtupidity. As the want of food, ſufficiently nouriſhing, and in ſufficient quantity, firſt locally affects the ſtomach and bowels, where the diſeaſe uſually breaks out, there are few

ſwellings about the neck, and theſe ſlowly gather. The child becomes what is vulgarly called *pot-bellied.* The lymphatic glands ſituated near the bowels ſwell. As the action of the glans is neceſſary to due nutrition, the limbs begin to waſte; the patient pines for a time, and at laſt dies of atrophy.

The ſmoothneſs of the ſkin, and ſoftneſs of the hair, indicate an original deficiency of conſtitutional vigor. There are authentic obſervations of perſons, whoſe hair in health is curling and hard, but becomes ſtraight and ſoft when they are ill. It was the caſe with Mirabeau, the well-known orator of the French conſtituent aſſembly.

The tumours, in all their degrees, appear evidently to depend on a too feeble action of the abſorbents. The bloated countenance is a firſt degree of dropſy, the moistening liquid of the cells being exhaled in greater abundance than it is in-

haled. The ſwelling of the upper lip, and thickening of the noſe, depend partly upon this cauſe, partly perhaps upon the enlargement of a variety of glands that are ſituated there, which receive more liquid and more ſolid matter from the arteries, than the abſorbents carry back.

On the enlargement of the pupil, which has been mentioned as a mark of the ſcrophulous temperament, and as a ſign of conſumption, it is proper to add a few remarks. In ſtrong people, all the muſcular fibres have more *tone*, or are habitually more tenſe, or ſtretched, than in the weak. The iris partakes of the general condition of the muſcles. The pupil is ſmaller, as the iris is more ſtretched, and the reverſe. The inſpection of the iris, therefore, ſeems to prove neither more nor leſs than the graſping of the arm, the ſtate of the muſcles of that member being perfectly aſcertainable by the hand. Perhaps the appearance of the iris is the more fallacious

of theſe two teſts. For beſides the effect of a ſtrong light in diminiſhing, and of a faint light in expanding the aperture of the pupil, the ſmalleſt inflammation, or ſenſe of heat about the eye, is almoſt ſure to cauſe a contraction of the pupil. Other affections of the iris from aſſociation, are deſcribed by medical authors. All theſe render the inference from the state of the pupil, to the state of the constitution, leſs certain. And I do not perceive that the condition of the larger muſcles, when the limb is examined in a given poſition, is liable to equal variations.

When mechanical ingenuity ſhall be applied to its most worthy object, the living ſystem, exact meaſures of the *tone* of the muſcles will, in all probability, be invented. Thus, a bandage encircling a fixed part of the arm, by means of a nooſe, and having a weight appended to its end, might give a meaſure of the tenſion of the muſcles which it encompaſſed. A deeper

impreſſion will be made upon the arm, as the habit is weaker, and the weight would conſequently ſink lower. I mention this as a proof of the poſſible application of exact meaſures, to the living ſyſtem. Ingenious men will contrive others more appropriate and exact.

A certain conformation of that part of the body within which the lungs are contained, is juſtly reckoned among the moſt unfailing marks of a diſpoſition to conſumption; and particularly a narrow cheſt. This is often accompanied with a long neck, and with ſhoulder blades ſtanding out like ſmall expanded wings. The appearance of the ſhoulder blades ſeems to depend merely upon the ſtate of the cheſt, ſince they cannot adapt themſelves ſo cloſely to a narrow, as to a broad cheſt. The long neck is leſs conſtant, and is ſeen ſometimes to accompany a well-formed cheſt.

The narrowneſs of the cheſt is, I believe, generally ſuppoſed to ſtraiten the lungs in

their play during reſpiration, and hence to injure their ſubſtance, ſo as to occaſion pulmonary conſumption. This ſeems to me an erroneous idea. During the opening of dead bodies, I have always obſerved, that in the narrow-cheſted, the cavity of the thorax has been as well adapted to the ſize of the lungs, as in the broad-cheſted. Were it otherwiſe, I conceive that this organ would not wait till the age of puberty before it became ulcerated.

Narrowneſs of cheſt immediately depends on a weak action of the powers that form this part; and is often an hereditary fault of conformation. Hence the whole exterior and interior of the cheſt, are ill-finiſhed; the ribs not ſufficiently arched, and the ſtructure of the bones leſs ſolid. The debility of the ſoft parts continues, and at a certain period, tubercles are formed.

Mechanical means, therefore, of widening the cheſt, in behalf of the compreſſed lungs,

appear to be a misdirection of our endeavours to prevent consumption. If the original conformation can be improved, it can only be done by a treatment calculated to render the whole system more robust. There is no advantage in the use of the dumb bell, beyond any other exertion that employs the arms; and as swinging weights must always be a task, and will never be performed with ardour, and but seldom with perseverance, it is better not to put young people upon it at all. Exercises which have some near object in view, level to their comprehension, and agreeable to their feelings, should always be preferred, even when we regard health.

BLEEDING at the NOSE.

Among the earlier marks of a consumptive tendency, frequent bleeding at the nose, without any external violence, may be properly reckoned. This takes place

commonly in young perſons of a puny habit, with black hair and black eyes. It is not, however, always confined to this temperament. The cauſe appears to depend upon a want of equality in the powers of the arteries and veins, preciſely ſimilar to that disturbance of the balance between the arteries and the abſorbents, which has been already deſcribed at large. The obſervation, that this inequality ſhews itſelf in earlier years in the noſtrils, and ſeldom till towards puberty, in the lungs, looks like a ſtrong corroborating proof of the opinion, *that there is in childhood ſome conſtitutional cauſe of equilibrium between thoſe veſſels of the cheſt that carry liquids from the heart, and thoſe that carry them back; which in certain conſtitutions is deſtroyed after the period of childhood is paſt.*

It was formerly ſuppoſed, that theſe ſpontaneous bleedings from the noſe ariſe from too great force of circulation; and that thoſe who are ſubject to them re-

quire a *cooling* regimen, and a strict vegetable diet. It is, however, eaſy to ſee that theſe accidents *may* eaſily happen when the circulation is generally weaker than in the healthy state of robuſt people, provided only one ſet of veſſels is feeble in compariſon with the other. The arteries may convey blood with a leſs than the average impetus. Yet if the veins carry it back much more ſlowly, a hæmorrhage will take place. To be convinced that *ſpontaneous* bleedings from the noſe and from the lungs do not ariſe from exceſs of conſtitutional vigour, it is only neceſſary to look at the perſons to whom they ſeldom or never occur. It is not to the sturdy huſbandman, the nervous porter, the full-fed butcher, the able-bodied ſeaman, the amazonian fiſhwife. They are ſtrangers to theſe attacks. In confirmation, it may be added, that this ſpitting of blood uſually happens in the early morning, when the movements of the animal machine are more tranquil

than at any other ſeaſon of our waking hours.

I have obſerved, that neither bleeding from the noſe in early youth, nor ſpitting of blood about the time of puberty, are limited to the temperament marked by dark eyes. In proof of this aſſertion, I could relate three diſtinct caſes. But the following curious instance, which ſeems to connect the *hæmoptoic* with the ſcrophulous variety of conſumption, will be ſufficient.

Miſs D——, a young lady of a conſumptive family, had in her childhood, frequent and copious bleedings from the noſe. About the age of 18, ſhe ſpit blood repeatedly in ſmall quantities about the time of riſing; a cough, with expectoration of matter and hectic fever ſupervened. I ſaw her when ſhe was far advanced in conſumption. She had at that time, a large ſcrophulous tumour of the lymphatic glands above the clavicle.

Leſt what is here ſaid of the ſpitting of

blood in dark eyed perſons of a phthiſical habit ſhould be miſapprehended, I muſt advertiſe the reader that the ſpitting of blood, which *precedes* conſumption, is alone to be underſtood. In the conſumptive of every temperament, ſpitting of blood and more copious diſcharges of blood from the lungs happen—in conſequence, no doubt, both of the encreaſing debility of the veins, and of the injury the blood veſſels receive from the progreſs of pulmonary ulceration.

It is alſo neceſſary to add, that blood-letting in caſes of frequent and conſiderable loſſes of blood from the noſe, may be in the firſt inſtance neceſſary. But when rendered ever ſo neceſſary by obſtinate continuance, or alarming returns of the complaint, it ſhould only be conſidered as preparatory to a regimen for rendering the habit robuſt, which can never be effected by long perſeverance in a low diet.—In ſome conſtitutions, it has been accidentally diſ-

covered that procuring discharges from a distant organ has prevented a discharge of blood from the lungs. A saline purgative, for example, taken almost every day for many years, has been thought upon good grounds, to prevent hæmoptoe in one or two instances. But by this, nothing was gained towards the extermination of the tendency to consumption. The parties have continued incapable of much exertion or enjoyment. And in the case of children at least, the precarious tenure of a valetudinary life would be but a heartless motive for continued care.

DIFFICULTY WITH RESPECT TO ADULTS.

With firm resolution on the part of enlightened parents, when those parents happen to be in affluent circumstances, children may be brought up hardy and comparatively robust. Their feelings are

all in favour of the plan that would terminate in this reſult. That method of education which makes them ſickly, by precluding the free uſe of their limbs and their ſenſes, puts the most violent conſtraint upon their inclinations ; and their demeanour acknowledges existence as a bleſſing, only during the ſuſpenſion of their cruel and pernicious impriſonment.

It is otherwiſe in more advanced years, eſpecially with women. The ſprings of their conſtitution have loſt their force from diſuſe. Nature has been compleatly ſubjugated by habit. Except under the operation of extraordinary excitements, (for at the idea of a ball, even the Creole fair rouſe from their languor) they ſhun with abhorrence every exertion that approaches to labour, and cheriſhing their fatal indolence, fall into conſumption, or are ſuſpended, by ſome cruel diſorder, over the gulph.

But at what, if they were ever ſo willing to eſſay their unaccuſtomed muſcles,

(I beg pardon for the expreſſion) ſhall ladies labour? Yet he who eſtabliſhed it as a maxim—*that the Gods ſell all good things for labour*—if the ſtate of ſociety, in which he lived, had required him to be more pointed and particular, might have laid it down that *the Gods do not ſell health, the best of things, but for labour*.—What is wanted, is a ſeries of occupations, laſting and not liable to become weariſome. The employment of turning within doors, and of gardening without, may be well recommended to thoſe who can command a lathe and a garden. The female ſex are deeply indebted to that humane and enlightened phyſician who has attempted, in ſuch a variety of ways, to facilitate botany, and to render it engaging. It were to be wiſhed, that by any inducement, the elegant and healthful ſtudy of plants could be made to ſuperſede the too great devotion of our female youth to muſic. In its preſent ſtate, it is to be lamented that botany

is a purſuit that too frequently either proves diſtaſteful to beginners, or ſoon terminates, becauſe there are few ſpots that do not ceaſe to ſupply objects to the induſtrious ſtudent, when ſhe ſtops ſhort of the claſs, *cryptogamia*.

To the juſtneſs of this objection, I am afraid that the feelings of many ladies muſt bear teſtimony. There is, however, every reaſon to expect, that the opprobrium will ſhortly be removed. Chemiſtry, which every day beſtows the refreſhing gloſs of novelty upon the objects, moſt ſullied by long uſe, is even now ready, by its inexhaustible power of producing intereſting changes, to relieve the inſipidity and poverty of Linnæan ſcience. With moderate ingenuity, joined to ſome acquaintance with botany and chemistry, it is in the power of almost any female, who reſides in the country, or in a country town, to aſſist in laying the foundation of the ſcience of PHILOSOPHICAL HORTICULTURE.

What reſource domeſtic games, ſuch as ſhuttlecock, can afford, is ſufficiently known to the reader. I cannot hope that my recommendation will give them any additional zeſt. It would greatly contribute to health, and not a little to immediate enjoyment, if any new games of exerciſe could be invented, or any old ones revived, in which the heavy time of evening viſits might be paſſed. The firſt attempts to put in practice ſuch an innovation, would appear irreſiſtably ridiculous; even to the parties moſt convinced of its utility. But would any thing imaginable appear more ridiculous than dancing, if familiarity had not taken away its power to produce laughter?

THE BLOOD-WARM BATH.

The free uſe of the warm bath among the nations of antiquity, to whom the care

of the perſon was ſo important, has often ſtruck thoſe who have compared their manners with ours. The ancients, particularly the Romans, bathed full as frequently as we waſh. The learned French phyſician and antiquarian, Laurence Joubert, has collected many inſtances of Romans of diſtinction, who bathed four, five, ſix, and even eight times in the day. Every one bathed at leaſt once. The prohibition of the bath was numbered among the mortifications to which certain prieſteſſes in Greece were bound by the rigid rules of their order. (*Marcard ueber die Baeder*, 1793. ſ. 26).

" The Engliſh (ſays Mr. Strutt, iii. 70), like their anceſtors, were very fond of bathing. Many of the nobility had baths for that purpoſe in their own houſes. Beſides theſe, there were public baths in different places, to which thoſe who could not afford to have them in their own houſes uſually repaired. The ladies apprehended

that bathing contributed to, and preſerved, their beauty. For I find in an old manuſcript book of prognoſtications (written as early as the reign of Richard the ſecond), the following advice to the ladies;—that in the months of March and November, they ſhould not "goe to the bathe for beutye."

That a cuſtom, ſo conſonant to the perpetually increaſing taſte for refinement and luxury, ſhould ſo entirely have gone into diſuſe, would be matter of ſurprize, if the ceſſation of the leproſy on the one hand, and on the other, the dread of being infected by a different diſeaſe,* did not ſufficiently explain the change.

* "The leproſy gave riſe to the inſtitution of a great number of baths in Germany. As want of cleanlineſs for the moſt part occaſioned the diffuſion of the infection, frequent ablution ſerved as one of the moſt effectual means of prevention, for which purpoſe it is alſo enjoined in the police laws of the old teſtament. As much as the bath had been in uſe among the ancient Germans, ſo much was it neglected in this period (from 1144 to 1417.) How difficult it proved at that time to habituate men to cleanlineſs,

In the mean time, medical hypotheſes have ſpread from the writings of phyſicians, and cauſed that to be avoided upon principle, which was given up partly becauſe the urgent neceſſity for it ceaſed, partly becauſe the circumſtances of the times ſometimes occaſioned ſerious inconveniences to be felt from its promiſcuous uſe.

In the whole doctrine of phyſical education, and in all that relates to the care of health, ſubſequently to the period of

is apparent from the trouble taken by ſovereigns and the prieſthood to introduce bathing.

The clergy converted bathing into an act of religion, and perſuaded the people that they could thereby waſh away their ſins and obtain abſolution. Such baths were named baths for the ſoul (*balnea animarum* and *refrigeria animæ*). In many monaſteries baths (*ſtubae balneatoriiae* or *vaporaria*) were eſtabliſhed, and bequeſts left for the ſoul-baths. By virtue of theſe, the poor people were admitted at ſtated hours to bathe gratis, either in the cloiſters or in the baths of the town, or in the hoſpitals. They were likewiſe cupped or bled when they deſired, and afterwards fed, or preſented with bread, beer and ſalt; and this for the benefit of the ſoul of the founder, and for cooling it and aſſuaging its ſufferings in the fires of purgatory.

maturity, there is nothing, after the conſideration of diet, air, exerciſe, and cloathing, that applies more immediately to the ſubject of the preſent treatiſe, than the effect of baths of different temperature. Nor is there any thing, perhaps, belonging to the conduct of life, which is generally ſo ill-underſtood. Phyſicians themſelves are but juſt forſaking the falſe analogies of their predeceſſors, and a few of the moſt inquiſitive reverting to unbiaſſed obſerva-

In order alſo to bring the knights to cleanlineſs and to get rid of their filthy long beards, no knight could be admitted to any order, or any new knight created, unleſs he had bathed, and cauſed his beard to be taken off, the evening before.

Since the uſe of linen ſhirts has become general, and every one has provided for the cleanlineſs of his own perſon, theſe laws of police have become ſuperfluous; and bathing, being no longer a part of the duties of knighthood, or of ſumptuous marriage ceremonies, and having no connection with the welfare of ſouls in purgatory, has fallen too much into neglect. The venereal diſeaſe has probably contributed to the diſuſe of public baths."

Moſer Geſchichte der Wiſſenſchaften in der Mark Brandenburg. pp. 283—286.

tion. Ideas on this ſubject, approaching to accuracy, are very rare among the faculty.

For theſe reaſons, I ſhall conſider with ſome attention the operation of water, heated to different degrees, upon the living ſyſtem, and bring together ſuch authorities and facts, as cannot fail to remove erroneous preconceptions from minds open to the truth; and if they do not overcome the public indolence, ſufficiently to occaſion the adoption of ſalutary meaſures to any great extent, they will at leaſt ſufficiently deter from ſuch practices as are greatly prejudicial.

The inducements for believing that the blood-warm bath almoſt univerſally weakens, and that the cold bath ſtrengthens in nearly the ſame proportion of inſtances, would be too contemptible to mention, if they had not produced, in this country, a perſuaſion nearly general. In ſome caſes, the concluſion ſeems to have been drawn from a ſubſtance, ſo little allied to the

living body, as ſteel; and I am not ſure if the term *hardening* has not had its effect in making this analogy paſs with ſome people. So liable are thoſe to be deceived, who do not attend to the ſort of reſemblances they combine in their reaſonings! Formal experiments with leather and parchment have been inſtituted, to determine the *bracing* effect of cold water. But they are evidently nothing to the purpoſe; and, in the inſtance of leather, it has been found that water at the freezing point, and water at 95, equally lengthen it; and that ſtrips of parchment are rendered thicker and ſhorter, by water of both temperatures. Theſe effects are, indeed, produced not by the temperature, but by the mechanical action of the fluid, which inſinuates itſelf into the ſubſtances. (*Marcard.* l. c. pp. 44—60). The obſervation, that a ring upon the finger becomes looſer in the cold bath, ſhews that the ſkin, or if you pleaſe, the whole joint, contracts.

In the blood-warm bath, the ring ſcarce becomes tighter, if the hand be not cold before going in. In the hot bath, that is, the bath ſome degrees above the heat of the body, it becomes evidently tighter, probably on account of the enlargement of the blood-veſſels, from the ſtimulus of the heat, as we ſee in the hot fit of a fever. This effect takes place in a ſmall degree, in blood-warm water, particularly if the hand be previouſly chilled. But ſuch changes have no neceſſary connection with the increaſe or diminution of the ſtrength. Theſe remain to be determined by new obſervations, as much as if no experiment with the ring had been made.

However thoſe who never uſe it may chooſe to ſpeculate upon the tepid bath, experience, in places where it is employed with almoſt incredible perſeverance, is decidedly in favour of its ſtrengthening power. At Pfeffers, in Switzerland, (which is eſteemed one of the pureſt of all

waters from impregnation),*from ſeven to twelve hours are daily ſpent in the bath, and this upon the average is continued for a couple of months. Dr. Tiſſot ſays he has been very credibly informed, that at a bathing place in the Valais, patients paſs the greater part of the time of their reſidence in the water. Dr. Marcard atteſts, that at Baden in Argow, he has himſelf ſeen invalids ſit four or five hours in the bath. The lateſt writers concerning the warm bath at Landecke in Sileſia, where the bathers are immerſed up to the chin, diſſuade from too long a continuance in the water. They think *ſix* hours ſufficient at one time. The uſual courſe here is of four, five, or ſix weeks. Thoſe who uſe

* At Pfeffers and moſt of the Swiſs baths, it is only the lower half of the body that is immerſed. However the upper part is expoſed to an atmoſphere of warm vapours, which according to the hypotheſis of relaxation ought to have as bad an effect as mere warm water.—See Marcard, l. c. p. 64.

theſe ſeveral baths are, in common, weakly,* nervous people, ſuch as inſtead of recovering their health (as they actually do), ought to be diſſolved altogether, if the warmth gave to the water had a relaxing operation. To many medical men in this country, ſuch relations will appear as paradoxical, as to the generality of uninſtructed readers. There can, therefore, be

* To ſhew to what extent that active enquirer into the effects of bathing whom I ſo frequently quote in this ſection, has carried his practice in caſes of weakneſs, I ſhall tranſcribe one of the caſes he relates. A woman about 30, had ſuffered exceſſively during three years from pain, anxiety, ſpaſms and ſleepleſſneſs. She took very little food, had, at times, a little feveriſhneſs, and was greatly emaciated. For a year ſhe had never been regular. The utmoſt effort to which ſhe found herſelf equal, was ſitting up in an arm chair, ſupported by pillows. She required to be turned in bed. She had taken a great deal of bark and other medicines. The diſorder had not the appearance of conſumption, nor of any incurable leſion of the abdominal viſcera. Long continued and great exertions in attending the ſick had preceded this illneſs.

From recollection of ſomewhat ſimilar caſes, the author reſolved to recur to the tepid bath, notwithſtanding the extreme debility and the prejudices againſt it. "I did not, ſays he, venture to repeat the baths in quick ſucceſſion, on

no occaſion to add a warning againſt a raſh imitation of the Swiſs practice of bathing. The knowledge of the facts may however ſuggeſt uſeful reflections, and do away ſome of thoſe prejudices that cramp the practitioner of phyſic in his operations, and in both theſe ways contribute to the eaſe of the afflicted.

But an outlandiſh faſhion of ſoaking will ſcarce ſufficiently recommend the

account of the patient's weakneſs and of the effort, attending the operation. Several days were interpoſed between every two immerſions."

"The firſt trial produced viſible benefit. The patient ſaid, *ſhe felt ſtronger after it*; and from that day forward, ſhe ſlept better, though ſhe went into the bath with ſome dread, having never before uſed it. After the ſixth bath, that is in about a fortnight, to my aſtoniſhment, ſhe was able to riſe from her chair. She daily acquired ſtrength under a continuance of the bathing, became regular, and in two months, was perfectly well, and has continued ſo theſe three years.—In ſuch a ſituation, I never ſaw a more ſtriking effect from bathing. But how the doctrine of relaxation and reduction of ſtrength will apply here, I muſt leave to others to decide." Marcard l. c. pp. 57—60—The author ſays he gave medicines at the ſame time, but does not ſpecify what they were.

warm bath in England. And as this is the point on which the reader is moſt likely to be ſcrupulous, I can with leſs propriety deſert the plan with which I ſet out; viz. of endeavouring to convince his judgment, inſtead of placing entire reliance upon his faith. I ſhall therefore lay before him ſome preciſe information, concerning the effect of the tepid bath on the organs that keep the blood in circulation. This is of the greater importance to the preſent enquiry, becauſe in the phthiſically diſpoſed, the pulſe is uſually overquick, eſpecially when they begin to fall off from their ordinary health. For the facts, I ſhall be indebted to Dr. Marcard. But it may perhaps add to the authority of his report, if I mention, that before his intereſting work fell into my hands, I had made obſervations of the ſame kind.

1. Dr. Marcard's firſt experiment was upon a young man, in a complaint attended with emaciation, whoſe pulſe was

uſually ſomewhat feveriſh. After ſitting perfectly ſtill in his apartment, where the temperature was ſcarce 58,° the pulſe was 98 in a minute. The bath was heated preciſely to 96°. After being in it eight minutes, the pulſe was 92; in thirty minutes it was 88; and he remarked that he felt very comfortably.—By evening, the pulſe had regained its former quickneſs.

2. A girl of 12, had a pulſe of 96 in a room at 74°. After being in the bath half an hour, her pulſe was lowered to 80.

3. A lady of 36, of a vivacity unuſual in a nothern climate, had a pulſe of 84, which was its uſual ſtandard. She had never bathed; the idea therefore, excited a degree of terror, on account of which, and of a degree of nauſea, ſhe took a glaſs of wine beforehand. Nevertheleſs, in half an hour, her pulſe, in a bath at 94°, fell to 72. The heat of the room was 69°.

4. Dr. Marcard himſelf, with a pulſe of 70, went into a bath at 93, the room

being at 70. Having been accuſtomed to cold water, the bath felt too warm, and produced a ſenſe of anxiety and ſpaſm (about the cheſt I preſume). He had the bath, therefore, lowered one degree, and in half an hour the pulſe beat only 60 ſtrokes in the minute.

5. A lady of 38, in a room at 74°, had a pulſe of 78 before bathing. After half an hour's continuance in water at 92° (which to her was an agreeable temperature) her pulſe was brought down to 70.

6. A man of 50, in a room of 78°, had a pulſe of 73. After continuing half an hour in a bath at 92°, which he felt rather too warm, his pulſe was but one ſtroke ſlower.

7. An hypochondriac of 60, in a room at 76°, and under ſome oppreſſion, had a pulſe of 96°. After three quarters of an hour's continuance in a bath at 90°, his pulſe was but 68°.

8. Two days afterwards, the ſame per-

ſon, in a room at 72°, had a pulſe of 80. His bath was 89°, and at laſt but 88°. He continued in it for an hour; and getting out had a cold ſhivering. Nevertheleſs, when this had gone off in bed, I found his pulſe only 60.

9. A lady of 27, exceedingly nervous, and much troubled with ſpaſmodic ſeizures, had a pulſe of 96, in a room at 73°. After being 25 minutes in a bath at 90°, her pulſe was ſtill 96. In 35 minutes it was 94. She had great dread of the bath.

10. In three quarters of an hour, the ſame perſon's pulſe roſe from 80 to 92, in a bath of 90°. But ſhe had ſpaſms. This is the only time except once, that the author obſerved the pulſe to riſe in a bath of this temperature; but he obſerves, that a perſon may be taken ill, when bathing. Perhaps the too low temperature occaſioned the indiſpoſition in this inſtance.

11. The ſame lady bathed again, two days afterwards; the water was at 91°;

the pulſe 98. In three quarters of an hour, it fell to 80. The author adds, that this debilitated, morbidly ſenſible or nervous female, who had been long ill, and had tried various remedies to no purpoſe, recovered after a courſe of bathing, of a month's continuance.

12. Dr. Marcard went into a bath at 89°, his chamber being 72°, and his pulſe 63. In an hour and half, he counted only 54 pulſations; his feelings being highly pleaſant at the time, which in his then ſtate of health was uncommon.

13. An exceſſively nervous young Ruſſian, took the bath one day when he was irritated by the warmth of the weather, and by his ſpaſms. His pulſe was 104, the room at 77°, the water at 90°. In 20 minutes, his pulſe was only 64

14. A very ſickly child had a pulſe of 144, in a room at 60°. His bath was at 88°, and in 20 minutes his pulſe was only 116.

15. A very ſtriking diminution of the pulſe was obſerved in a child of ſeven years and a quarter, who lay in a hopeleſs ſtate of ſtupor and convulſion, and actually died in ſixteen hours after. The pulſe could not be accurately counted without the greateſt difficulty. In every 5 ſeconds, there were more than 16 pulſations; in a minute, therefore, about 200. The child was put into a bath at 93°, becauſe the thermometer, under his armpit, roſe no higher, and the temperature ſeemed perfectly agreeable to his feelings, as he was perfectly quiet in the bath. In half an hour the pulſe was ſenſibly ſlower, and more diſtinct; and in an hour, the author could count 140 ſtrokes in a minute. It had therefore, in this time, fallen 60 ſtrokes in the minute.

16. A lady whom her phyſicians had declared to be hectic, becauſe her pulſe was quick, and her fleſh waſted, conſulted the author. Her pulſe, he ſays, was always

100---106, and occaſionally roſe to 120 and above, at which time ſhe felt extremely ill. The ſlighteſt movement produced this quickneſs of the pulſe, without the feelings of extreme illneſs.

Before the firſt immerſion, the pulſe was 120. The water was heated to 94°, and in half an hour the pulſe had not lowered above one or two ſtrokes. That evening and the next morning, it was 96; Dr. Marcard had never found it ſo low before.

"Before the ſecond bathing, the pulſe was 120, and in the bath 122. At firſt I imputed ſomething to dread of the bath; but the effect continued, though I reduced the bath to 90°. The pulſe was almoſt always quicker the day of bathing. On the whole it was ſlower, but always quicker in the bath. After the twelfth bathing, it was conſtantly at 94° out of the bath; but the thirteenth time of bathing it beat 106 times. The health of this patient was ſoon fully reſtored. She became perfectly

regular, after having for a year ceaſed to be ſo. Her pulſe, however, continued preternaturally quick, never falling below 94, and ſometimes riſing to 116. After a lapſe of ſome months, I for the firſt time, found the pulſe perfectly natural, though ſtill diſpoſed to riſe from ſlight cauſes."

17. The following equally ſtriking, and ultimately ſucceſsful experiment, affords a convincing proof that the reduction of the pulſe in the laſt caſe but one, was not the effect of ſome unobſerved cauſe, but depended on the warm bathing. " A child, three years old, (ſays the author) had a violent ſeizure, attended with vomiting. The uſual means were employed, and the feet frequently bathed. The fever continually increaſed, though even in the open air. In 36 hours, the pulſe had increaſed to 156; and in 48 hours, it could no longer be exactly counted. I could only number it for five ſeconds together, in which there were always 15 or 16 ſtrokes, that is, between

180 and 192 in the minute—a formidable degree of fever, announcing a highly dangerous illneſs. The child was at the ſame time exceſſively ill and reſtleſs. According to my ideas of practice, I could oppoſe nothing to theſe threatening ſymptoms, but the warm bath; and I began to reproach myſelf for not having had recourſe to it ſooner.------I therefore had a bath prepared in the middle of the night. I was doubtful what temperature to employ, as the child was preternaturally heated.------ A very accurate thermometer, made by Ramſden, placed in the child's hand, which I then graſped with my own, roſe to 100°. Hence, I fixed upon 94° for the bath. The moment the child was put in, ſome eructations were obſerved, and it ſeemed much quieter. In a quarter of an hour, I counted 148 pulſations in the minute. In half an hour they were 136 only. In three quarters of an hour the ſame. The bath was now cooled one degree. In 50

minutes, the child manifeſted a vehement deſire to be put into bed, and ſo it was taken out of the water. It was wonderfully quieted by the immerſion. For 24 hours, it had done nothing but moan, cry, and fret, contrary to its uſual mood. On being placed in bed, it was all at once tranquil, ſeemed to have no unpleaſant ſenſation, and good-humouredly wiſhing every body good night, fell aſleep, as if in ſound health; had an almoſt natural reſpiration, and did not ſtir. The pulſe did not return to its former quickneſs. Six hours after, it was at 148." The ſmall-pox now appeared, and was very ſevere. "Whether the diſorder would have been fatal, if the fever had continued to rage with equal force from twelve till ten o'clock next morning, which was the hour of the eruption, and whether earlier and more frequent bathings would have leſſened the diſorder, I cannot decide, though I think it probable."

The author relates, moreover, nine ex-

periments with baths of a temperature between 82° and 60°; and one experiment at 98° and 100°, in which laſt the pulſe was increaſed from 12 to 14 ſtrokes in the minute.

He draws the following general inferences.---1. Every bath below 96°, diminiſhes the quickneſs of the pulſe, when no particular circrmſtance occurs to prevent this effect. 2. The greater the frequency of the pulſe beyond its natural rate, the more it is diminiſhed by the bath. It muſt, however, be obſerved, that in ſeveral of the preceding caſes, the entire diminution cannot, by any means, be referred to the bathing. The pulſe had ſometimes been raiſed by motion, fear, or ſpaſms, and would of itſelf, after ſome time, have ſubſided. The temperature which *ſeems* to have the greateſt power of reducing the pulſe, is that between 96° and 85° of Fahrenheit's thermometer. This the author terms *warm*, or *tepid---(warm oder lauwarm)*. And he

uſes the term *ſeems*, becauſe he has few accurate obſervations on cool and cold baths. He never continued the cool ſo long as the tepid bath, and therefore cannot ſay what they would have done in the ſpace of an hour.

On the change produced upon the reſpiration by bathing, this diligent obſerver makes ſeveral pertinent remarks. The effect is more difficult to be determined than in the caſe of the pulſe. In general, he ſays, *after ſome time*, the breath grows ſlower. But in unaccuſtomed, and nervous people, it is long before the quickneſs, immediately ſubſequent to immerſion, and occaſioned by the preſſure of the water, is over. And even when the breath is very ſlow, a ſomewhat greater effort may be obſerved during the *inſpiration*, and a ſudden impulſe at the end of the *expiration*. "I have (he concludes) too often noticed the ſlowneſs of reſpiration in the tepid bath, to entertain the ſlighteſt doubt of the fact, though

I have not aſcertained the degree by a ſtop-watch.-----When a general calm is produced, it is natural that the function of reſpiration ſhould participate in it; beſides, the breath *muſt* be ſlower, becauſe the pulſe is retarded. That in perſons who go with dread into the bath, the breath will be quickened, as long as this ſtate of mind continues, it is eaſy to foreſee."

In circumſtances of great debility—towards the end of low fever, for example—other recent obſervers, as Dr. Brandis (*Journal der Erfindungen*, v. 13. 1794) aſſert from experience the benefit of tepid immerſion, and particularly the reduction of the pulſe as much as 16 or 20 beats in a minute.

Among the examples that tend to ſuggeſt juſt ideas of the power of the tepid bath, I have been ſtruck with none more than by that which Dr. L. Frank, Phyſician to the great hoſpital at Milan, has recorded in a foreign journal (*Salzburg Med. Chir. Journal f.* 1795. ii. 70).

"Among the variety of conſiderations, ſays he, which Dr. Marcard alledges to prove that the tepid bath ſtrengthens in place of weakening, as has been heretofore ſuppoſed, I queſtion if there be any ſo well calculated to ſupport his opinion as a fact perfectly familiar to us in Italy. It is well known that of the diſeaſe called *Pelagra*, which is exceedingly frequent among the peaſants of Lombardy, one of the chief ſymptoms is exceſſive debility. This debility cannot be more certainly removed by any means than by the uſe of the tepid bath. It is ſo great, that many patients are obliged to be carried, though the bath is not above forty paces from the ward. Many who can walk are yet ſo weak, that they cannot get into the water without ſupport. The appearance of theſe people at going in and coming out, is truly miſerable. Without being led by the attendants, they would ſtagger like drunken perſons In the ſpace of four or at moſt

of ſix weeks, they are commonly ſo much reſtored by the uſe of the warm bath, as to be able to return to their friends and their ordinary employments."

In a queſtion of importance to his happineſs, but foreign to his purſuits, a prudent man will withhold his practical aſſent from proofs, apparently the moſt cogent; and in dread of latent fallacy, may reaſonably require that the ſuffrages of competent judges ſhould be added to the evidence of facts. On this account, I have accumulated the preceding experiments and authorities; and I do not deem it ſuperfluous to ſubjoin the ſentiments of an obſervant phyſician in our own country. They are, in the main, perfectly ſimilar; and as the Engliſh and the foreign medical philoſophers named above, had no mutual communication, their coincidence will inſpire the public with greater confidence. "The uſe of a warm bath, ſays the author of Zoonomia, (ii. 684) of about 96 or 98

degrees for half an hour once a day, for three or four months, I have known of great ſervice to weak people; and is perhaps the leaſt noxious of all unnatural ſtimuli; which however like all other great excitements may be carried to exceſs, as complained of by the antients.* The unmeaning application of the words re-

* Dr. Marcard, beſtows much elegant learning on an inveſtigation of the ſentiments of the ancients regarding the tepid bath. He quotes a dialogue from Ariſtophanes, in which one of the characters ſays, "*I think none of the ſons of the Gods ever exceeded Hercules in bodily and mental force?*" upon which the other aſks: "*where didſt thou ever ſee a cold bath dedicated to Hercules?*—Dr. Marcard thinks it impoſſible to aſcribe ſo wild an abſurdity to the ingenious and conſiſtent people of antiquity as to make them conſecrate to the God of ſtrength, what they held to be ſo miſerably debilitating as we do.—They muſt therefore have believed warm baths to be capable of ſtrengthening the ſyſtem. And on account of their conſtant uſe, they could be at no loſs to judge. When the ancients number the warm bath among the luxuries that render effeminate by too frequent repetition, they always ſpeak of their abuſe; and do not underſtand phyſical but moral relaxation. If a phyſician now and then remonſtrated againſt bathing, it was out of charlatanerie, contradiction or want of diſcrimination; and he was ſufficiently confuted by univerſal experience. pp. 32. 37.

laxation and bracing to warm and cold baths, has much prevented the uſe of this grateful ſtimulus; and the miſuſe of the term warm-bath when applied to baths colder than the body, as to thoſe of Buxton and Matlock, and to artificial baths of leſs than 90 degrees of heat, which ought to be termed cold ones, has miſled the unwary in their application.

The ſtimulus of wine, or ſpice, or ſalt, increaſes the heat of the ſyſtem by increaſing all or ſome of the ſecretions; and hence the ſtrength is diminiſhed afterwards by the loſs of fluids, as well as by the increaſed action of the fibres. But the ſtimulus of the warm bath ſupplies heat rather than produces it, and rather fills the ſyſtem by increaſed abſorption than empties it by increaſed ſecretion, and may hence be employed in almoſt all caſes of debility with cold extremities, perhaps even in anaſarca, and at the approach of death in fevers."----

"When Dr. Franklin, the American

philoſopher, was in England many years ago, I recommended to him the uſe of a warm bath twice a week, to prevent the too ſpeedy acceſs of old age, which he then thought he felt the approach of; and I have been informed, that he continued the uſe of it till near his death, which was at an advanced age."

My experience of the blood-warm bath extends to a conſiderable number of caſes, particularly of perſons who from the loſs of relations by conſumption, with obſcure but alarming feelings of indiſpoſition, or with ſome of the more evident ſymptoms, dreaded an attack of the diſeaſe. Senſible benefit was received by moſt; permanent benefit by ſeveral; injury by none. The reduction of the pulſe during the time of immerſion, was perfectly aſcertained in a number of inſtances; and the ſtrengthening effect of the bath was ſometimes ſo apparent, that ſeveral of thoſe whom I deſired to bathe every other day, have aſſured me,

that on the day of bathing, they felt capable of greater exertion than on the following or preceding day.

My directions generally were that the temperature ſhould not exceed 96°; nor be below 92°; but between thoſe limits it ſhould be that moſt agreeable to the patient's feelings. And every one who has tried knows how ſenſibly the difference of a ſingle degree is felt. The time which I have generally recommended for bathing, has been between breakfaſt and dinner. For I have known an increaſe of pulſe and a degree of feveriſhneſs produced after dinner, by water at a temperature at which it would not have had any ſuch effect when the ſtomach was not full. There is another diſadvantage with which late bathers are threatened; namely, night-ſweats, which when it is the object to ſtrengthen, ought moſt carefully to be avoided.

The rule which I have commonly laid down for continuance in the bath, has

been to quit it the moment any unpleaſant ſenſation is felt: but if no ſuch ſenſation takes place, by gradual prolongations of about a quarter of an hour each time, to ſtay in for a full hour. This is ſaid in a ſuppoſition that the firſt trial will be for 20 or 25 minutes.

On coming out, no other precautions are neceſſary than prudence at other times would dictate. As perſpiration muſt be ſedulouſly avoided, no load of additional cloathing is admiſſible. And whatever cloathing the ſeaſon requires, will be ſufficient for the bather. In many ſcores of inſtances where a perſon has walked abroad immediately after the blood-warm bath, juſt as if nothing more than ordinary had occurred to him, I have not known one in which a cold was taken. I rather think a perſon more ſecure from ſuch an accident after bathing.

In advanced conſumption, I conſider bathing as too hazardous to be lightly

tried. Two years ago I attended two young men, accuſtomed to communicate their complaints to one another. One was in the laſt ſtage of conſumption, that is, in addition to the other uſual ſymptoms, he had ſome evening ſwelling of the feet. The other was juſt upon the verge of the diſorder, into which expoſure during military ſervice, afterwards precipitated him. By my advice he uſed the tepid bath, and ſeemed to himſelf to receive ſo much benefit, that he boaſted of it to his acquaintance, who was induced by this information, in ſpite of all my remonſtrances (for I was alarmed for the immediate iſſue of the trial), to go into the bath alſo. He coughed with exceſſive violence, and breathed with great difficulty, while in the water; and thought himſelf conſiderably worſe in both theſe reſpects for two days. His ill ſucceſs in the firſt, deterred him from a ſecond experiment.

I mention this inſtance, as a caution to

the conſumptive not to plunge into the tepid bath in conſequence of the preceding general recommendation, without being well adviſed. For I think that in caſes, and at times when the preſſure of the water is not likely to provoke coughing, it may give relief; and in one caſe of a child in whom conſumption had ſucceeded to the meaſles, I found it reduce the pulſe full 20 ſtrokes in the minute, eaſe the difficulty of reſpiration, and procure a general feeling of relief for ſeveral ſucceſſive days. But I went to work with every poſſible precaution, and was prepared to remove the patient the inſtant any ſign of diſtreſs ſhould appear.

There are always points which muſt be left to diſcretion, exerciſed upon the variety of conſtitutions and of circumſtances. Whether the bath ſhould be daily taken, is one of theſe points.

Weakly people, who have leiſure and convenience, may bathe every day, as long

as they find their ſtrength improve. They may then diſcontinue the bath, and after an interval, reſume it. From the example of the ancients, and of the Eaſtern nations at preſent, it may be gathered, that our ordinary ſummer heats need not interrupt the courſe; and indeed I have known it perſevered in with apparent advantage, through the ſummer. But ſhould any previous apprehenſion exiſt, or any ſuſpicious feeling ariſe, the warm bath may be diſcontinued during the moſt oppreſſive ſummer days; of which we are not often troubled with a long ſucceſſion.

The *hot bath* can never become part of the regimen, proper for the feeble, when age or conſtitution ſeems to threaten pulmonary ulceration. As far as the inveſtigation of the powers that actuate the living ſyſtem has hitherto gone, we have no reaſon to ſuppoſe that this remedy can be employed, with probability of advantage, in phthiſical caſes, unleſs great external

warmth might prevent or ſtop the cold fit of hectic fever, which is a queſtion foreign to the preſent tract.

BED-WARMTH.

A perſon in bed is in a blood-warm bath: and if in health, after a continuance of ſeven or eight hours, he finds himſelf recruited. It is remarkable that this familiar fact did not render the hypotheſis of relaxation doubtful. On account of ſleep, and of the decumbent poſture which eaſes the muſcles much more than the ſupport afforded by water does, the caſes are diſſimilar. The analogy, however, is one of thoſe that are moſt apt to ſtrike inaccurate reaſoners; and I certainly think it deſerved from the philoſopher more regard than any of the arguments in favour of the weakening operation of the tepid bath.

Should the heat of the body riſe above the ninety-ſixth degree, as it ſometimes does conſiderably, the bed becomes a hot bath, with all the ſtimulating, and to many conſtitutions, pernicious properties of the hot bath. If a perſon thus circumſtanced, continue long aſleep, he either falls into perſpiration, or awakes feveriſh and unrefreſhed. If perſpiration have broken out, the linen ſhould be changed, and the perſon ſhould remove to a dry part of the bed. In the caſe of heat of the ſkin, without moiſture, advantage ſhould be taken of the cooling effect of the atmoſphere, either by riſing, or by diminiſhing the bedcloaths. I know no rule of health, to which ſtricter attention ought to be paid, than this: *when a perſon of feeble habit feels heated in the morning, let him riſe without a moment's delay.*

By ſound ſleep, the ſuſceptibility of the ſyſtem is ſo much increaſed, that a temperature, at other times beneficial, may

be injurious after reſt. The morning nap, after which weak people often find themſelves more fatigued than on going to bed, ſhould be avoided. The temperature of the body, under this circumſtance, well deſerves to be aſcertained. But I apprehend there exiſts another cauſe, which I dare not undertake preciſely to aſſign. For we may frequently obſerve the nervous (that is, thoſe who are weak, with exceſs of ſenſibility) frequently heavy in the morning, a little enlivened towards noon, and in the higheſt ſpirits at midnight. This is the effect of the ſtimuli that operate during the hours of waking. The morning torpor ariſes in ſome way from the too long ſubduction of theſe ſtimuli, as the abſorbent glands in ill-fed children loſe their power for want of ſtimulation, and as the appetite and digestion are destroyed, when a proper ſupply of aliment is withheld from the ſtomach; a caſe in former years not uncommon among young wo-

men too intent upon a ſlender ſhape, and at boarding ſchools; and not altogether unknown at preſent, as I have lately witneſſed.

COLD BATH. COLD AIR.

However often the meaſure has been adviſed as a reſtorative, or reſorted to without advice, it is certain that much ſickneſs, and many deaths, have been, and are occaſioned, by immerſion in water below 50° and 60°. It may be in general aſſerted, that no meaſure more certainly enfeebles the weak, and more certainly excites pulmonary conſumption in the prediſpoſed, or hurries on the diſeaſe faſter when it is forming.

Mr. H. a fine young man, (in whoſe family conſumption had been) feeling himſelf reduced after ſome juvenile exceſſes, imagined ſea bathing would reſtore his

ſtrength. After two or three immerſions, a dry cough came on, which increaſed with his bathings. Suſpecting at laſt that he was doing himſelf injury, he quitted the ſea, and applied to me. I found him in a confirmed conſumption, and already ſo reduced in ſtrength, that his feet ſwelled in the evening. His complaint could hardly be ſaid to have had any firſt ſtage. He immediately went abroad, and died in a very few weeks. This, the rapid progreſs of the diſeaſe perhaps excepted, is a very common hiſtory, where cold bathing has been unadviſedly practiſed.

Men of ſtrong conſtitution, reduced by temporary cauſes, are liable to conſumption on expoſure to ſevere cold. For it is immaterial whether the medium in which they are immerſed be water or air. And unleſs peculiarity of conſtitution, or the exertion of certain muſcles, renders other parts particularly ſenſible to cold, the cheſt will generally ſuffer moſt. Mr. G., the

late able conductor of a well-known newſpaper, of a ſtrong conſtitution, and without hereditary diſpoſition to conſumption, had been much weakened by a caſual indiſpoſition. The medicines he took produced a troubleſome diarrhœa, and a ſevere fixed pain in his bowels. One day, on being expoſed to a ſtream of cold air, the pain ſuddenly ſhifted from his bowels to his cheſt. A cough came on, which never afterwards quitted him, and he died of conſumption. This is an inſtance of that tranſlation of diſeaſe from the abdomen to the cheſt, of which I before obſerved that it not unfrequently happens to perſons, naturally feeble.

The career of John Weſley, the captain general of the methodiſts, had nearly finiſhed as early as 1753, in conſequence of ſucceſſive expoſures to cold, when he was greatly debilitated. In October of that year, he contracted an ague, but went on travelling and preaching with his uſual ardour of

ambition or fanaticiſm.---" Sunday, Nov. 4, (ſays he), I rode to Hayes, becauſe I had promiſed, though I was much out of order. It was with the utmoſt difficulty that I read prayers, and preached, and adminiſtered the ſacrament. I went through the evening ſervice with more eaſe. But at night my ſtrength quite failed. I ſhould have taken ſome rhubarb next day, but I had no time, having claſſes to meet from morning to night.

" Thurſday, 8th. In the night my diſorder returned more violent than it had been ſince I left Cornwall. I ſhould have taken ſome ipecacuanha in the morning, but had no time to ſpare, my buſineſs being fixt for every hour, till four in the afternoon. And by that time all my complaints were gone, ſo that I needed only a little food and reſt. Monday, 12th. I ſet out in a chaiſe for Leigh, having delayed my journey as long as I could. I preached at ſeven, but was extremely cold

all the time, the wind coming ſtrong from a door behind, and another on one ſide, ſo that my feet felt juſt as if I had ſtood in cold water. Tueſday, 13th. The chamber, whereever I ſat, though with a large fire, was much colder than the garden, ſo that I could not keep myſelf tolerably warm, even when I was cloſe to the chimney. As we rode hōme on Wedneſday, 14th, the wind was high, and piercing cold, and blew juſt in our face, ſo that the open chaiſe was no defence, but my feet were quite chilled. When I came home, I had a ſettled pain in my left breaſt, a violent cough, and a ſlow fever. But in a day or two, by following Dr. Fothergill's preſcriptions, I found much alteration for the better; and on Sunday, 18th, I preached at Spitalfields, and adminiſtered the ſacrament to a large congregation.

Monday 19, I returned to Sherborne, and gained ſtrength conſiderably; till about eleven at night. On Wedneſday, 21,

I was obliged by the cramp to leap out of bed, and continue for ſome time walking about the room, though it was a ſharp froſt. My cough now returned with greater violence, and that by day as well as by night.—Saturday 24, I rode home, and was pretty well till night. But my cough was then worſe than ever. My fever returned at the ſame time, together with the pain in my left breaſt. So that I ſhould probably have ſtayed at home on Sunday 25, had it not been advertiſed in the public papers that I ſhould preach a charity ſermon at the chapel, both morning and afternoon. My cough did not interrupt me while I preached in the morning, but it was extremely troubleſome while I adminiſtered the ſacrament. In the afternoon I conſulted my friends, whether I ſhould attempt to preach again or no. They thought I ſhould, as it had been advertiſed. I did ſo, but very few could hear. My fever increaſed much

while I was preaching. However, I ventured to meet the ſociety. And for near an hour my voice and ſtrength were reſtored, ſo that I felt neither pain nor weakneſs.

Monday 26, Dr. Fothergill told me plain, I muſt not ſtay in town a day longer, adding: "*If any thing does thee good, it muſt be the country air, with rest, aſſes' milk, and riding daily.*"—The medicines producing no benefit, "about noon (the time that ſome of our brethren in London had ſet apart for joining in prayer) a thought came into my head to make an experiment. So I ordered ſome ſtone brimſtone to be powdered, mixt with the white of an egg, and ſpread on brown paper, which I applied to my ſide. The pain ceaſed in five minutes, the fever in half an hour. And from this hour I began to recover ſtrength." (*Weſley's Journal, Vol.* xxix. 290—293.) It ſhould not be omitted that to the benefit of ſulphur

and ſupplication, he added four months repoſe from his apostolic labours.

Had Weſley been at this time a young man, inſtead of fifty one, and of phthiſical habit, and the future exertions of his lungs leſs, his eſcape might have been quoted as evidence in favour of inceſſant horſe-exerciſe; an idea likewiſe ſuggeſted by the life of the nobly active Howard. (*Dr. Aikin's character of John Howard, Eſq.* p. 16.) But in reading the paſſage where the feet are deſcribed *as feeling just as if he stood in cold water*, it is difficult to avoid reflecting how many young people, eſpecially young women, with conſtitutions as weak by nature as Weſley's was rendered by diſeaſe, with not greater warmth of devotion, with more prediſpoſition to pulmonary complaints, without the preacher's advantage of ſtrong bodily action, may have carried away death in their boſom from the ſpot where they ſtood to hear him! It is certainly nothing uncommon to find

the firſt origin of conſumption diſtinctly referred to a chill, received at church. And cold as many of theſe ſtructures are, it is evident from the nature of things, that in the winter ſeaſon, the cold bath itſelf cannot be more dangerous to that claſs of the unhealthy to whom theſe obſervations refer.

Another way in which girls in a certain line of life receive fatal chills, deſerves to be pointed out. Either to œconomize fuel or *becauſe they will not give trouble*, they not unfrequently, in cold weather, go through the long ceremony of preparing for a ball in a chamber without a fire. In this ſituation, if they muſt ſubject themſelves to its hazards, they ſhould drink once or twice a ſmall quantity of hot water. This will prevent the chill, without producing any bad effect, if no more be taken than juſt enough to keep the ſenſations comfortable. A little experience will determine the quantity and the temperature.

The Dauphin, father to Louis xvi. whoſe excellence of diſpoſition and fortitude under his ſevere illneſs cauſed him to be ſo deeply regretted, owed his premature death to a cauſe, that is often fatal to perſons employed in ſedentary occupations. His feet were ſubject to profuſe perſpiration. After remaining a long time in a damp place, he fell into a ſtate of languor; his cheſt became diſordered; and he loſt his fleſh. It was in this ſtate that he had his portrait taken, and ſent to Marechal Richelieu—to whom he had before given a portrait, drawn in his full health—with this meſſage. "*It is that you may compare the past with the preſent. You will find me much changed. Soon I ſhall be more ſo.*" After his death, his lungs were found almoſt totally destroyed.

To enumerate all the ways in which cold excites pulmonary conſumption in thoſe who have the diſpoſition, would be equally difficult and uſeleſs. It ſuffices to

have given a diſtinct admonition against great and long-continued chills. It is of courſe that they ſhould injure different people in different degrees.

It will ſound almoſt incredible that young perſons, not merely in a ſtate of ſuſpicious debility without any formed diſeaſe, ſhould be plunged into the cold, freſh, or ſalt bath, but that thoſe who have hardly recovered from a tedious complaint of the cheſt, attended with a cough, ſhould receive the ſame dangerous advice. Among the phthiſical patients for whom I have been concerned, this caſe however has not ſeldom occurred. When the circumſtances have been peculiarly diſtinct, I have, for the ſake of greater exactneſs, requeſted a written account from the party, with permiſſion to uſe it for the public information. The following is one of theſe narratives. How far it renders apparent the connection between cauſe and effect, I ſhall not labour to explain.

HOT-WELLS, April 4, 1798.

Dear Sir,

In compliance with your deſire to be informed of the ſymptoms that preceded and followed my bathing in the ſea laſt autumn, I proceed to ſtate, that a fright I received in the month of May, occaſioned a gradual loſs of ſleep, appetite, and ſtrength; and at last, in addition to theſe complaints, I had a little ſhort, dry cough, morning and evening, ſo trifling indeed, that had not a friend anxiouſly obſerved it, I ſhould not have thought it worthy of my attention. On my applying to a very clever man for medical advice, he perſuaded me to remove to ———, where I ſhould meet with conveniences for bathing. About the middle of August, I complied with this advice. Between the hours of ſeven and eight in the morning, I was ſurprized, when in the water, by (as

I find) an uncommonly obstinate struggle to recover my breath. I flattered myself, from the glow I felt after quitting the machine, and appetite with which I eat my breakfaſt, that I ſhould be relieved of all my evils by this pleaſant remedy. However, I did not remain long under the influence of this deluſion, as a laſſitude and violent head-ach ſucceeded immediately, attended at night with a fever, and ſlight delirium, and increaſe of cough. I perſiſted in my intention of bathing again the third day, but the effects were evidently ſo alarming, that I conſented to apply again for directions how to remove my now conſtant companions, the cough, fever, &c. I was brought ſo weak, that on the eighth day from my firſt bathing, I fainted away three times before breakfaſt. I need not inform you, ſir, of the perſeverance with which this cough, and complaint on the lungs, has accompanied me through

the winter, notwithſtanding your unceaſing ſkilful endeavours to the contrary.

I am, Sir,

with great truth,

To Dr. BEDDOES. L. BAINES.

When I ſaw this young lady firſt, the ſymptoms of confirmed conſumption were too obvious to admit of the ſmalleſt doubt. The aggravation of ſymptoms after the bathing continued with ſcarce an intermiſſion till death. The example is the more remarkable, becauſe the patient herſelf was far from puny, the parents healthy and strong; and the family for two generations at least, if not more, free from conſumption.

The following instance is not leſs diſtinct. Readers accustomed to candour, will ſmile or frown, according to the mood they may be in, at the attempt to palliate the unſucceſsful preſcription.

Note from the Rev. J. A. BROMFIELD.

Briſtol Hot-Wells, March 22, 1798.

Sir,

In anſwer to your questions, I beg leave to inform you, that in June, 1788, I was first attacked with a cough, and recommended by a phyſician of reputation "to go to the ſea air, and when the cough was ſubdued by medicine and change of air, to bathe in the ſea;" the cough was ſoon ſubdued by the means preſcribed, and then with every precaution the ſame ſkill could dictate, I bathed in the ſea once, went down in a carriage, and returned on foot a mile and a half; but instead of a glow, my bathing, notwithstanding my walk afterwards, was attended with coldneſs, and a very ſpeedy return of my cough, and even a temporary confirmation of it, for it was hardly got under again before the winter ſet in. I have only to add, that I bathed about

three in the afternoon, the tide then ſerving, after a ſlight repast about noon; to which, but wrongly in my opinion, the ſubſequent miſchief was attributed. I am,

Sir,

your very obedient ſervant,

To Dr. BEDDOES. J. A. BROMFIELD.

Queſtions and obſervations.

Could bathing at 3 o'clock p. m., after a cold repast taken two hours before, produce ſuch an effect?

Would that effect have been avoided by early bathing before breakfast?

If evening bathing, and after a moderate meal, was the cauſe of the miſchief, why did not two other invalid bathers, who went in the ſame carriage, and did not take the precaution of walking back, ſuffer likewiſe?

It may be obſerved, that for nine ſummers preceding 1788, I bathed in freſh

water conſtantly, and often twice or more times in the day, without injury.

When I bathed in the ſea early in July, and relapſed after it, I only dipped into the ſea, dreſſed inſtantly, and got into exerciſe directly.

This letter, with or without theſe obſervations, Dr. Beddoes, as he ſees occaſion, is welcome to publiſh.

J. A. B.

In ſcrophula, cold ſea-bathing was heretofore in high repute. The opinion of its efficacy was probably founded, in part, on its ſuppoſed bracing power. It is however certain, that in this complaint the lateſt obſervers declare ſtrongly againſt the cold, and equally in favour of the tepid bath, whether of ſalt or freſh water. (See Reid on *cold and warm bathing*. *Cadell*. 1795).

COOL BATH.

By the cool bath, I underſtand water between eighty and ſixty-five degrees of the thermometer. In the caſe of air, the loweſt of theſe temperatures ſcarce feels cool, and the higheſt we call hot. But it muſt be remembered that water, by reaſon of its denſity, has a far greater power of cooling than air. Hence I ſuppoſe, if our ſenſations could be meaſured, we ſhould feel more chilled by water at 60°, than by air much below the freezing point.

In ſummer, people rather weakly, who have no cough, or other complaint of the cheſt, may plunge for an inſtant into water at 75°. In the winter, expoſure to the atmoſphere, but in a way not to be chilled by it, will be ſufficient for ſuch conſtitutions.

Experience ſufficiently proves the utility of dipping infants in cool or cold water. In infancy, the danger to the lungs ſcarcely exiſts. The action of cold on the ſurface of the body, at that age, produces different aſſociations of animal motions, whether from the leſs preponderance of the arteries in the cheſt, or from whatever other cauſe. And much advantage is gained towards future health, by eſtabliſhing the habit of theſe aſſociations. The impreſſion of cold will not afterwards tend in any thing like the ſame degree, to induce pulmonary diſeaſe. In other words, people may be brought to bear cold better by early uſe.

The temperature of the water in which the infant is to be dipped, muſt be regulated by his conſtitution. The more puny, the leſs cool ſhould the bath be, eſpecially at firſt. An obſervant parent will eaſily diſtinguiſh by the effects, when the temperature is too low. The countenance,

in this caſe, will be dull, the motions ſluggiſh, the noſe, ears, and feet cold. When there is an increaſe, or no immediate diminution of alacrity, it may be concluded that the bath is not too cold. And the continuance or improvement of health, in the long run, will furniſh another criterion.

Some years ago, for want of underſtanding the difference between the effect of momentary application of cold, and continued chills, dangerous miſtakes ſeem to have been common in phyſical education. In many families, children were kept perpetually ſhivering under light cloathing, and in cold apartments. Of thoſe whom this ſevere diſcipline rendered invalids for life, a few ſurvive; but the great majority has periſhed by meſenteric atrophy, by conſumption, or by ſome other diſeaſe of debility.

APPROACH of CONSUMPTION.

In a work intended for the direction of readers, provided with ſuch notions only as chance has offered, and therefore often prejudiced, I have regarded prolixity as by much the ſmalleſt of two oppoſite faults. So far, therefore, in order to avoid dangerous ambiguity, or to remove groundleſs ſcruples, I have been profuſe in examples and authorities. But by maintaining the ſame courſe any longer, I ſhould overſtep the limits which I have myſelf endeavoured to fix for this claſs of compoſitions, in the *introductory lecture* already quoted, and ſhould incur the cenſure due to thoſe miſchievous writers, who pretend to inſtruct perſons that are unaccuſtomed to the appearance of diſeaſes, and are deſtitute of preliminary information, in the proper application of remedies. In the little that

follows, I ſhall therefore only endeavour to make it underſtood, when it is time to apply for advice, and how the ſerious evil of uſeleſs medication may be avoided.

In medical writings, the indiſpoſition that precedes pulmonary ulceration, and hectic fever, has no proper name; and as it is generally paſſed before the phyſician is called in, it has not been deſcribed with ſufficient minuteneſs.

In young people, of narrow cheſt, or hereditary diſpoſition to conſumption, unuſual laſſitude is often the moſt diſtinct ſign of the approach of the diſeaſe. It has been ſometimes related to me as part of the hiſtory of the conſumptive, that on the firſt deviation from health, they have drooped in a manner, which gave occaſion to their friends to reproach them with idleneſs. When quicker reſpiration, and oppreſſion after dinner, or regular evening indiſpoſition, with flying chills and fluſhes are likewiſe obſerved, an accurate exami-

nation ought to take place without delay. The pulſe is at preſent conſidered as ſcarce falling under the cognizance of any but profeſſional men, though others can eaſily form ſome judgment with regard to its frequency. When conſumption is advancing, it will be more frequent than natural, and in general much more frequent towards the cloſe of the day. Several of theſe ſigns may occur, and even great ſhortneſs of breath be at the ſame time preſent, without danger. The complaint known under the name of chloroſis, bears a groſs reſemblance to conſumption; and its favourable termination, which with any tolerable management, is a thing of courſe, often deceives the uninformed into a belief that this or that water, this or that family receipt, this or that advertiſed medicine, are efficacious in true conſumption. Thoſe caſes, however, are very rare, in which the experienced practitioner of phyſic cannot diſtinguiſh the two diſorders at the firſt

glance. Sometimes, however, there is a real difficulty. A miſtake is the more to be apprehended, becauſe the remedies for chloroſis, probably by giving a ſtill greater preponderance to the arteries over the abſorbents, hurry on the formation of tubercles. The practitioner, who can hardly fail to be aware of the difficulty when it exiſts, will keep a watchful eye upon the ſymptoms, and ſoon correct his error, when he is originally unfortunate in his deciſion. But thoſe who confide in advertiſed or family compoſitions, will be apt to go on blindly following directions, without ever ſuſpecting how eſſential it is, in the firſt place, to be certain of the real state of the patient.

A cold may occaſion tubercles where none pre-exist, and may greatly advance them, where they have been ſlowly forming. Where it lasts many days, particularly in thoſe of a certain age and habit, it becomes justly ſuſpicious. But many

conſumptive people believe *they have only a cold*, when their complaint has really nothing of the nature of catarrh; when it has begun gradually, and not from any ſingle impreſſion of cold; when there has been no diſcharge from the noſtrils; when no expectoration follows the ſevere fits of coughing, or none but of a little frothy phlegm. A perſon well verſed in diſeaſes will ſoon diſtinguiſh the catarrhal from the church-yard cough. But to the uninſtructed, this is an abundant ſource of inveterate error, and to the fraudulent, of profit; nor can the ſource fail, till inſtruction in the principles of animal nature ſhall become a branch of general education. Falſe judgments, propagated with that poſitiveneſs which is peculiar to ignorance, have long maintained, and will long maintain, the demand for thoſe *ſyrups* and *balſams*, of which it cannot certainly be denied, that they are infallible in all ſuch bad coughs, as would go off of themſelves.

It ſometimes happens, that a dangerous weakneſs of the abſorbents exiſts on the ſurface, as well as in the ſubſtance of the lungs. This is known by frequent expectoration of mere phlegm, in ſmall quantities at a time, without coughing; and when young perſons have the habit of expectorating into their handkerchiefs, which often they will continue, for a long time, with ſuch dexterity as not to be noticed by careleſs obſervers, the ſtate of the cheſt, and of the ſyſtem in general, ſhould be carefully aſcertained.

Loſs of fleſh, of colour, and ſtrength, with the falling off of the hair, or any ſimilar ſign of local, combined with general debility, will alarm the moſt heedleſs parent.

Many of the ſigns enumerated in this ſection, make their appearance for years before the lungs become ulcerated; and in the interval, the patient's ſtate will be undergoing perpetual changes. For a time,

there will be conſiderable debility, want of refreſhment from ſleep, loſs of appetite, ſqueamiſhneſs, or ſickneſs on riſing, emaciation, with manifeſt quickneſs of reſpiration, independent of exertion, if the motion of the cheſt be watched. Moſt of theſe threatening appearances ſhall vaniſh and a degree of ſtrength and plumpneſs return; and the reciprocation be kept up till ſome apparent or obſcure cauſe produces an enlargement and ulceration of the tubercles.

Journeys, by land or water, often procraſtinate, and ſometimes, perhaps, accelerate this event. The effect of exerciſe on horſeback, or of motion in a carriage, differs exceedingly in different individuals, whether they are actually conſumptive, or are only diſpoſed to become ſo. After a ride or a drive of ſome continunce, it has been very much a cuſtom with me to examine the pulſe. I have ſometimes found it ſenſibly ſlower; ſometimes quicker;

and the feelings at the time, and the effect upon the complaint, have always corresponded. In two patients, of whom, whether I considered the fate of their relations, or their own conformation, or the present symptoms, I could not doubt that they were in confirmed consumption, I have seen the high praise bestowed by Sydenham upon incessant equitation, justified. One, after remaining well a year, relapsed and died. Of the other, I learned that he continued well for more than two years; and I do not know that he has relapsed.

The general feelings, and the increase or diminution of feverishness, must determine the quantity and kind of exercise, proper for the individual, in whom signs of imminent consumption appear. The friends of invalids should therefore take care not to force them to exertion in defiance of nature.

Various dissections, and especially those of the great anatomist Camper, prove that

there is a variety of conſumption, without ulceration of the lungs; but this variety we have not been ſufficiently taught to diſtinguiſh during life. A chief circumſtance here muſt be extraordinary debility of the ſuperficial abſorbents; and perhaps the firſt ſtage conſiſts in the expectoration of mucus, lately mentioned, which might be termed a *bronchial gleet*.

CURE of CONSUMPTION.

Ever ſince I have had ſome opportunity of becoming acquainted with the condition of the medical art, as it is practiſed in the great world, the lot of mankind has appeared to me ſcarce on any account ſo much to be deplored, as on account of the feelings of certain leading profeſſional men, in reſpect to the treatment of conſumption. On quitting the ſchools of medicine, I

imagined that phyſicians of great name, ſtimulated by a mixed feeling of indignation and ſhame, would be tormenting themſelves with perpetually reiterated efforts to ſubdue this great enemy of the human ſpecies ; and however often they might be baffled, that they would always feel it their duty to return to the charge.

I ſuppoſed, that even a regard to gain would force them out of a ſyſtem, which extra-profeſſional perſons, from witneſſing its daily inutility, muſt learn to deſpiſe, and rather than truſt to it, have recourſe, as in prudence they might, to the firſt ſecret preparation they ſaw announced in the newſpapers. Little did I think that theſe men—leaders only in vogue, and laſt in merit—abandoning for themſelves all idea of improving the treatment of a diſeaſe, from which they drew immenſe gains, would conſider every endeavour to ſupply their deficiencies, if not as a crime againſt ſociety, at leaſt as an infringement upon

the almoſt total monopoly they enjoy of the lucrative part of the *ſick-trade*, and that they would repreſent to the credulous, new methods as experiments to be dreaded----- As if any thing could be more ignominious than perſeverance in experiments, of which conſtant repetition had rendered it morally certain that they would fail: or as if in a diſeaſe ſo invariably fatal, any innovation, that does not increaſe pain or ſhorten life, could be a juſt object of apprehenſion. For at all events, the innovator, when he finds his extraordinary meaſures fail him, will have exactly the ſame reſources as the adverſary of improvement. There will remain to him the draught of Riverius, the ſyrup of poppies, the acid of vitriol, the chalk mixture, and that whole tribe of palliatives, which between ourſelves, gentle reader! an obſervant nurſe may ſoon learn to adminiſter, to nearly as good advantage as the moſt ſpecious doctor.

Beſides ſhallow men, rendered inſolent

by ſucceſs, modeſt men, loath to depart from prevailing opinions, have been ſatisfied to believe in the impoſſibility of *diſperſing* tubercles, and, by conſequence, of preventing or curing conſumption, in the great majority of inſtances. Their timidity prevented them from feeling how immoral it was to receive compenſation, without ſtraining every nerve to merit it; and how humiliating to go on without a poſſibility that the great deſideratum ſhould be ſupplied, except by inſpiration granted to ſome female dotard, by the ſucceſsful temerity of ſome empiric, or by information, imported from ſome tribe of ſavages.

Had they been bold enough to ſcrutinize the maſs of phyſiological facts, they muſt have perceived, that the diſſipation of pulmonary tumours, and the cure of pulmonary ulcers, are juſt as much within the powers of the animal œconomy, as the diſſipation of various other tumours, and the cure of various other ulcers. To ſhew

that I do not practiſe the deceit of turning prophet after the event, I ſhall produce a paſſage which I ſubmitted to the conſideration of medical philoſophers, upwards of two years ago. "The diſcovery of every new ſpecific (or ſubſtance capable of correcting given morbid actions of the ſyſtem) affords a new reaſon for believing in the exiſtence of others. For ſome ſcrophulous ulcers, we ſeem to have found a new ſpecific in ſorrel; for (ſome) venereal and hepatic affections, in nitrous acid; ſuch as we poſſeſſed before in mercury. Theſe are diſeaſes, in themſelves, not many degrees leſs formidable than cancer and conſumption. We have analogies enough to perſuade us, that there is no leſion of organization, induced by the powers of the living body, modified in one way, which the ſame powers, differently modified, may not repair; and that by dint of frequent ventures, ſome happy hand will draw from the lottery of nature, a remedy

for each of thoſe diſeaſes which at preſent moſt baffles the phyſician, and tortures the patient." (*Medicinal uſe of factitious airs, part V. App.* p. **********86). Nor is it neceſſary to truſt this reaſoning to mere analogy; the recoveries, however rare, that have taken place, whether from ſea voyages, or accidental combinations, ſhew that the cure of conſumption is no phyſical impoſſibility. And that a remedy ſhould not ſooner have been diſcovered for this, than for ſome other diſorders, is leſs owing to the nature of conſumption, than to thoſe accidents which brought the European world acquainted with Peruvian bark, quickſilver, and other powerful articles of the materia medica.

In a recent publication of diſtinguiſhed erudition, a bare index of the medicines recommended in conſumption, and of the authors who have recommended them, fills twenty quarto pages. (*Ploucquet initia bibliothecæ medico-practicæ.* Tubingæ 1796.

VI. 454—473). Notwithſtanding this abundance, had the preſent eſſay been ſent abroad a few months ago, I muſt have concluded it with an exhortation to employ preſervative means with the greater diligence, as well on account of the *certain mortality* of the diſeaſe, as of its painful progress. For it becomes me to acknowledge, that the trials that have been made of factitious airs and vapours, ſeem, as yet, very far from having produced any thing like a ſucceſsful mode of treating conſumption. The utmoſt that can be ſaid is, that certain vapours and ſtabling the patient with cows are not unpromiſing, when the method is tried on a proper ſcale. As to the efficacy of this or that ſpring, in any period of conſumption, there is nothing in the pagan and popiſh legends concerning conſecrated fountains and holy water, more abſurd than ſuch a perſuaſion.

Happily the ſucceſſive endeavours of

Engliſh phyſicians promiſe a brilliant æra for humanity. An effectual remedy for conſumption appears to have been nearly aſcertained; and on reverting to the hiſtory of the moſt brilliant diſcovery in phyſiology, and this, the moſt uſeful diſcovery in medicine, it will appear ſingular that they ſhould have been approached by the ſame gradual ſteps. The predeceſſors of Harvey were acquainted with ſuch proofs of the circulation of the blood, that it is aſtoniſhing they did not combine them ſo as to leave no doubt in their own minds, or in the minds of others. In like manner, there exiſted, before the two phyſicians, who have taught its ſafe, eaſy, and effectual employment, ſuch proofs of the antiphthiſical powers of the FOX-GLOVE, that one muſt wonder its uſe had not, a number of years ago, become general.

It is probable that certain beneficial effects of this plant, having been accidentally diſcovered, were made known, for a

long time, only by oral communication. Gerard and Parkinſon, old botanical writers, mention it as an expectorant; and Dr. Withering has printed from *Parkinſon's Herbal*, the manuſcript note of a country ſurgeon, affirming its efficacy in conſumption. In the *Family Dictionary* of Salmon, it is ſaid, upon the faith of long experience, perfectly to cure "a phthiſis or ulcer "of the lungs, when all other medicines "have failed, and the ſick are eſteemed "paſt cure."

Notwithſtanding the temptation, which ſuch an encomium held out in ſo calamitous a diſorder, the difficulty experienced in managing the medicine, and its violent effects, occaſioned it to be abandoned, at leaſt, by the regular practitioner, till from its efficacy in ſtimulating the languid abſorbents of the dropſical, Dr. Darwin inferred its poſſible uſe in pulmonary ulcers; and corroborated his inference by that medical miracle—a cure of confirmed

conſumption—evidently wrought by this plant (Medical tranſactions, 1785, iii. 276).

The facts related by Dr. Darwin, and others publiſhed by Dr. Withering about the ſame period, ſo far overcame the apprehenſions of a large portion of the faculty, as to induce them to preſcribe fox-glove in dropſy. As the period neceſſary for its exhibition in dropſy is but ſhort, its violent effects appeared leſs intolerable. But there could be no hope of healing ulcers of the lungs in a ſhort time; and the uſe of ſo formidable a remedy in conſumption ſeemed either to be rejected by the common feelings of patient and phyſician, or elſe it was adminiſtered with a degree of timidity which could not fail to deprive it of its efficacy. In ſpitting of blood, however, and incipient conſumption, it was occaſionally ventured upon, and as Dr. Ferriar and, I believe, others report, with ſucceſs.

In this ſituation the uſe of fox-glove

in conſumption remained; and the ſick were left without relief, and without hope, till Dr. Drake, and Dr. Richard Fowler, led by an enlightened view of cauſe and effect, ſeem to have diſcovered what had long been the univerſal wiſh, but hardly, perhaps, the expectation of any. Dr. Drake propoſed to himſelf two objects. He hoped that the fox-glove, by promoting abſorption, would prevent that hurtful change in the ulcerous diſcharge, which he, in common with Dr. Darwin, ſuppoſes to be produced by the contact of air. At the ſame time, by powerfully retarding the action of the arterial ſyſtem, the ſecretion of matter might be diminiſhed or ſuſpended. He doubted, indeed, whether he ſhould be able by the cautious and continued uſe of fox-glove, to render theſe conſequences ſufficiently permanent to promote a cure. He had the ſatisfaction, however, to find in two inſtances, which he has related at large, that the pulſe could be

lowered to forty ſtrokes in a minute, and the depreſſion continued till a compleat and permanent cure was effected.

Dr. Fowler's attention was directed to the fox-glove, as a remedy likely to be uſeful in phthiſis, by its almoſt uniform effect in rendering the action of the arteries more ſlow than natural, at the ſame time that it ſeems to excite the abſorbents. Diſeaſed parts of the body may be removed by depriving them of *all* ſupply of blood, and even by diminiſhing to a certain degree, the arterial ſupply, while the abſorbents are left to act in full force. My friend hoped that this might be effected by the operation of fox-glove, on tubercles in the ſubſtance of the lungs: and proceeding upon this idea, he has been ſucceſsful in many caſes of confirmed conſumption, in ſome of which, the patients ſeemed not to have many days to live. *(West-country contributions, Longman.)* In his letters to the author, many months ago, he expreſſed

the fulleſt confidence that this treatment would generally ſucceed.—Both theſe phyſicians thought and acted independently of one another.—In caſes of pulmonary diſeaſe where the exiſtence of tubercles was indicated by every ſymptom, and where they ſeemed ready to break out into open ulcers, I have fully verified their obſervations; and I daily ſee many patients in pulmonary conſumption, advancing towards recovery with ſo firm a pace, that, I hope, conſumption will henceforward as regularly be cured by the fox-glove, as ague by peruvian bark. Could we obtain a ſingle auxiliary for fox-glove, ſuch as we have in many ſubſtances for the bark, I ſhould expect that not one caſe in five would terminate, as ninety-nine in an hundred have hitherto terminated. But I believe a majority of caſes will yield to ſimple fox-glove. It is evident, that no new caſes need be ſuffered to advance beyond the firſt ſtage without the applica-

tion of this medicine, and few into it.

I mean not to conceal that the fox-glove is a dangerous, which means only that it is a powerful, medicine. I ſay nothing of the manner in which it ſhould be adminiſtered; becauſe no perſon, unpracticed in phyſic, ſhould attempt to adminiſter it. I hope, however, that every reader of this treatiſe, will inſiſt that it ſhall cautiouſly and perſeveringly be adminiſtered to his conſumptive friends. All other methods are comparatively frivolous. Moſt methods abſolutely ſo. And I know from experience, that the fox-glove may be given with ſafety, to hectic and probably conſumptive infants, a few months old.

As I pretend to no ſhare in this moſt beneficial of diſcoveries, I might ſpeak with the leſs reſerve in praiſe of thoſe who have accompliſhed it. But there are occaſions on which *all* encomiums are inadequate, and *any* encomiums impertinent. The leaſt conſiderate muſt perceive, that

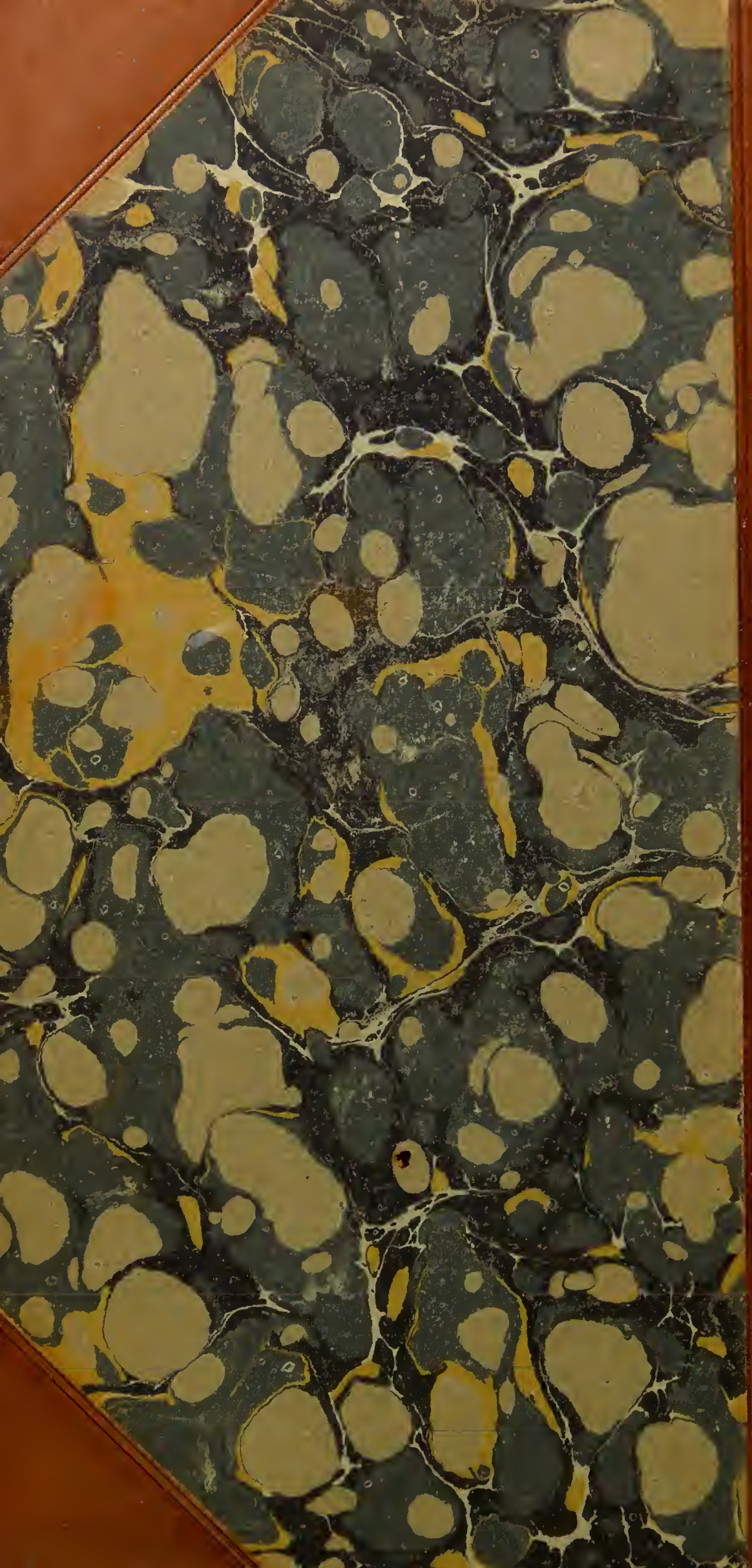
if the ſubſequent harveſt correſpond to the firſt fruits, there is a cauſe for national rejoicing, greater and more univerſal than has ever before occurred. The authors of *diſtant* benefits live and die, unnoticed, becauſe few can judge of the ſolidity of the foundation they have laid, or the utility of the future ſtructure. But the advantage here, muſt ſtrike every eye, and come home to every boſom. No man is without ſome notion of the evil; and none therefore, without ſome meaſure of the good.

I know that of all things in which they are intimately concerned, mankind are the moſt incompetent to judge of medical merit. But there are differences which none can fail to recognize. If in *former* times, public favour and public honours may have been thrown away upon phyſicians, whoſe names were unknown in the republic of ſcience, however they might be revered in the circles of the frivolous, thoſe

with whom the diſtribution of honours and rewards now reſts, are ſurely too diſcerning and too juſt to ſuffer inefficiency and mediocrity to uſurp what all the world muſt acknowledge to be due to effective talents.

The confidence which I have expreſſed in the newly aſcertained treatment of conſumption, may appear ſcarce conſiſtent with the zeal with which I have recommended a preventative regimen. But it ſhould be obſerved, that thoſe who have leaſt of the phthiſical diſpoſition, will enjoy an exiſtence, in other reſpects, leſs harraſſed by painful ſenſations; that, if they ſhould be thrown into the diſorder, the means of cure will probably be more certain, (for, as I have already ſuggeſted, *Weſt-country Cont. p.* 534-5, in ſome puny conſtitutions the abſorbents will perhaps not be ſufficiently ſuſceptible of ſtimulation); that they will be leſs liable to relapſes; and that it is ſtill more deſirable,

now we have a remedy that will ſtop its progreſs, to be apprized of the approach of conſumption. For the foxglove ought not leſs to be employed when the diſorder is forming, than when it is formed.

I cannot diſmiſs this publication without expreſſing my conviction that no man's diligence can provide him with a ſeries of facts, relative to the general health, which others may not have it in their power to complete and amend. If what I have written ſhall occaſion any new information to be brought forward, whether it come through the medium of the preſs, or by private correſpondence, I ſhall receive it with pleaſure, and avail myſelf of it with an impartial regard to public utility.

E N D.